

The Riks

T. Paramasiva Iyer

Price Four Rupees.

THE RIKS

OR

PRIMEVAL GLEAMS OF LIGHT AND LIFE

BY

T. PARAMASIVA IYER
District and Sessions Judge of Bangalore

BANGALORE:
MYSORE GOVERNMENT PRESS
1911

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To

The Memory of

THE LATE MARQUIS OF RIPON, K.G.,

THE SAINTLY AND ILLUSTRIOUS VICEROY OF INDIA (1880—1885),

THE LATE MAHARAJA

SRI CHAMARAJA WADIAR BAHADUR, G.C.S.I.,

THE GOOD, WISE AND SWEET-TEMPERED RULER OF MYSORE (1881—1894),

AND

THE LATE RAJYADHURANDHARA

SIR K. SHESHADRI IYER, K.C.S.I.,

THE GREAT AND HIGH-MINDED DEWAN TO HIS HIGHNESS THE LATE

SRI CHAMARAJA WADIAR BAHADUR, G.C.S.I.,

(1883—1894),

AND DEWAN OF MYSORE (1895—1901) DURING THE MINORITY OF HIS HIGHNESS

SRI KRISHNARAJA WADIAR BAHADUR, G.C.S.I.,

THESE DISCOVERIES ARE DEDICATED AS A TRIBUTE OF ADMIRATION AND REVERENCE.

2004953

AUTHOR'S PREFACE.

I SEND out this book in its crude and semi-digested form for reasons which will be obvious on reading any one of its chapters. If I succeed in modifying human thought in regard to ancient religion and mythology, the credit will be entirely due to the western learning I have imbibed, and I ever cherish the day when my good and strong-willed Professor Dr. Wilson practically carried me away to his Physical Science class and facilitated my realising nearly a quarter of a century later the identity of Vēdic and Purāṇic stories with geological and chemical phenomena. A full and accurate exposition of the Vēdas and the Brāhmanical literature based on the Vēdas will demand the aid of a plastic intellect, scientific imagination, expert knowledge, practical and theoretical, of Geology, Mining, Organic Chemistry, Agriculture, and Astronomy as well as close familiarity with high mountains and petroliferous regions. Above all, the student

of the Vēda should possess supreme capacity for putting himself in the place of our old-world forefathers. I have but exposed the main lodes and reefs by superficial trenching, and though a few more readings of the Samhitas would have given me a firmer grasp of the details of Vēdic technology, the prospect of returning to my bread-winning duty forced me five months ago to commence putting my ideas into shape for publication to ensure against the great mine of ancient knowledge remaining for ever at the bottom of the sea of oblivion. When I made my first discovery twenty-two years ago, I resolved to avoid confusing my head with commentaries and translations of all kinds. I made no notes lest my first crude ideas might blind me to the perception of the truth, and it was only after two dozen continuous readings of the Riks and a dozen of the white and black Yajus spread over eight years of active and varied service, that I ventured to look into Griffith's translation of the Rig Vēda and Professor Macdonnell's Vēdic Anthology for purposes of reference and verification. My grateful acknowledgments are due to these great scholars, the former of whom, alas! is

now no more. I have dedicated this work to the great English gentleman who recently passed into the bosom of the Lord full of years and honours, and who as Viceroy of India from 1880 to 1885 so truly represented the spirit of our revered Empress-Mother Victoria of blessed memory. The late Marquis of Ripon gave effect to the Rendition of Mysore to my late good and wise Maharaja Sri Chamaraja Wadiar, who more than justified it with the help of the great and good Brāhman, on whom shortly before his lamented demise he conferred the appropriate title of Rājyadhurandhara. With the Marquis of Ripon, therefore, I have associated my late gracious Maharaja of blessed memory and his great minister Sir K. Sheshadri Iyer, the splendid works of whose powerful, comprehensive and far-seeing intellect, inspired by a heart which ever beat in active sympathy with all classes of people, are indelibly stamped on the Mysore plateau, the beautiful Aditi of Southern India. My gratitude is due to Mr. Yates, Superintendent of the Mysore Government Press, for the fatherly care with which he piloted this rough-hewn and uncouth work through the Press.

With my young and gracious Maharaja's good wishes and the blessings and approval of my saintly and learned elder brother, Mr. Sadasiva Iyer, I now give this book to the world.

T. PARAMASIVA IYER.

ALBERT VICTOR ROAD,
CHAMARAJPET, BANGALORE.

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INTRODUCTION.

THE Riks literally mean 'gleams.' They are gleams of light and life which issued out of decay and darkness, united with the gods born of Viṣwakarman, and created the living species now flourishing on this earth. The Rishis were producers of Sōma, and the Great Architect who produced heaven and earth and produced the gods in heaven and earth in his form of Twashṭar was Agni. Heaven and earth had been produced long before the birth of the gods, but they were swallowed up by the monstrous serpent and its brood who prevented the sun from warming and lighting the earth, and destroyed light and life. The mightiest of Viṣwakarman's sons was Indra. Others of his mighty children were Aryaman, Mitra and Varuṇa. They were the sons of Aditi. Indra bore the brunt of battle and destroyed the great serpent as well as numerous small snakes, let loose the imprisoned waters, introduced the sun into the earth and destroyed

the towers, castles and walls, within whose deep, sunless shadows, the serpents grew in size and power. In this beneficent work Indra was helped by the Maruts, by the Rishis with their Sōma offerings, and by Vishṇu. To put these facts in Purāṇic language, when the earth was swallowed up by the serpent she appealed to Lord Viṣwakarman. He produced gods in three regions, the heaven, the waters, and the mid-region, sacrificed his energy in the fight with the dragon, restored motion to the waters, and light and heat to the earth. Having performed this great sacrifice and having created the living species out of his sacrificed energy, he made a gift of the earth to Kaṣyapa who was to wed her and propagate her children. The earth (Bhūmi) first declined the appointed bridegroom and threatened to sink into the sea; she was lifted up and resigned herself to her fate. This is the main burden of the Vēdic song. We have now to answer the riddle of the Rishis. 'Who was the serpent Vritra that swallowed up the earth? Who was Viṣwakarman that produced the gods?'

Who is Twashṭar who divided the heaven and earth, produced the Jānīs (the mothers

of the gods), wedded them to Vāyu, and produced the host of divine beings? Who was Indra and who were the Maruts that helped him in the fight with Vritra? Who was the mighty Vishṇu whose true greatness and superiority to Indra himself, only a few Rishis, chiefly Dīrghatamas, Bharadwāja and Vasishṭha, fully realised? Who was the omniform Sōma, the food of the gods, who helped the gods to destroy Vritra and his castles, and engendered creation by uniting with the gods?' These and several other questions incidental to them I will answer in the following chapters. The questions framed with a full knowledge of the answers will themselves suggest the replies to the Vēdic scholar of general culture and penetration. I had hoped to give a full exposition of the substance of the Riks with their intensely interesting details in so far as those details can be realised under present conditions of life, but health and life being uncertain, I content myself with a relation of the main facts embodied in the hymns, as those facts are all-important to the human race and carry the impress of truth on their face. I will not criticise the criticisms to which the Riks have

been subjected by modern scholars, as that would be extremely unfair to the latter, and I, as a child of Kaṣyapa, like them, happen to know the difficulty of unravelling Viṣwakarman's works with Kaṣyapa's needle. These revelations have no originality except in the sense that they, for the first time, reveal the main features of the original snow-ocean whence all religions have flowed, in pure or polluted streams according to the nature of the receiving grounds. Though the matter is everything and I can give a connected view of the Riks beginning at the beginning, I will give my discoveries in the order in which I made them, as otherwise an altogether erroneous view of the credit due to me will be created, and these discoveries are not the result of a study of the Vēdas and Vēdic literature with a view to interpreting them. My first discovery (and curiously enough it was the serpent that I first discovered) was the result of an accident. I slept over it for a decade and took up my Riks in 1901. I discovered Rudra, the Maruts, Rōdasī, Dyāvā and Pṛithivī, Antariksha and the Rochanas, in succession while looking for confirmation of my idea of the Ahi and then I could proceed no further.

In so far as these entities were concerned, I found the Rishis were consistent and sensible and they were not the silly, senseless, savage children from whom (as we all believed) no consistency was to be expected. I felt it was all-important to discover the identity of Indra, the god of might, the victor of a thousand battles, whose name has become synonymous with imperial greatness. His multitudinous works and qualities resound in thunderous songs from the beginning to the end of the Vēdas, but he eluded me for a whole year, and it was while studying the Agni hymns that a suspicion of his true nature gleamed upon me. And then such a blaze of light poured into me from the inner darkness, and I repeated the words of the Kaṭhā Vallis: 'The sun does not illuminate it, neither do the moon and stars, nor these lightnings! Whence is this Agni? He shines and everything shines after him.' I then discovered almost immediately that Vishṇu was the greatest and mightiest realisable form of Agni, the unknown. I knew the omniform Sōma, the king of the Brahmans, the Lord of life and the invigorating food and drink of the gods. And then I marvelled

that all this which looked so clear and simple in the dry daylight of common sense was not discovered long before. A great Vēdic scholar who closes the chapter on Vritra and cogitates on the Riks will quickly discover all that I have discovered and much more that my imperfect culture keeps concealed from me. As it is, what I have discovered is due to the Western learning that is in me, and it is my hope that that light and the light of the East it has uncovered may lead to more light and steep the so-called East and West in the common ever-living light of the Lord of all nations.

CHAPTER I.

VRITRA-AHI.

MORE than twenty years ago I read for the first time (in the London *Times*, I believe,) a lecture delivered by a typical Briton, banker and man of science, in which he expatiated on the pleasures of science, and referring to its destructive effects on old myths, instanced the old Hindu legend of Indra destroying the serpent, cutting out the beds of rivers by his thunderbolt and sending them forth to the sea. The lecturer (the present Lord Avebury) was a highly cultured scholar, and I wondered what made him seek his illustration in Hindu mythology when he had such a wealth of material to choose from in the classical literature of Greece and Rome with which he must have been thoroughly familiar. I felt there must be something peculiarly striking, either in the form of the myth, or in some great truth which it dimly reflected or partly concealed, that fastened the attention of a clear-headed man of science like Lord Avebury. Examining the original, I found references to Indra's beneficent work in loosening the imprisoned rivers in almost every book of the Rig Vēda, but there was one hymn in which the rivers themselves described their origin and that

was the great hymn of Viṣwāmitra which is the thirty-third hymn of the third mandala of the Rig Vēda. The hymn runs as follows:—

1. 'From the hollow of the mountains laughing like two mares let loose, like two pure white cows licking their calf, you, Vipāt and Sūtūdri, hasten with your milk.'

2. 'Prompted by Indra, desiring outlet, freely you flow towards the sea as by a car-road: rejoicing together and swelling with waves, you pass one under the other.'

3. 'We have reached unimpeded the most motherly tireless Sindhu and the great blessed Vipāṣ who lick their calf like mothers and flow after their common womb.'

These are the three verses addressed by the Rishi Viṣwāmitra to the rivers Beās and Sutlej; but before he proceeded with his invocation the rivers exclaimed:—

4. 'We rivers swelling with milk flow towards the womb prepared for us by the gods. The primary outlet of creation may not be turned aside; what can be the Brahman's object in invoking the rivers?'

Viṣwāmitra then unfolds his prayer:—

5. 'Helpfully still your waters for a while and lie low, O vivifying streams, in response to my soft words; the son of Kusika desiring protection calls upon you with all his great soul.'

The rivers reply in the following verses, to which in all probability Lord Avebury referred in referring to the triumphs of science:—

6. 'Thunder-armed Indra bit out our paths. He beat aside Vritra who encompassed the rivers. God Savitar (producer or creator) led us on and by Savitar's creative power we grow in volume and flow.'

7. 'That hero-work of Indra, his rending of the Ahi, must be noised for ever. With his thunder he broke the besiegers, and the waters longing for their home flowed on. In those songs of yours which will resound through the future centuries, do not omit these words of ours. In your outbursts of song unite with us (or embody our praise of Indra). Do not by carelessness (natural to man) O Jarita (decayer or rotter), suppress our words.'

These words of the rivers were echoed by Lord Avebury six or seven millenniums after they were sung but only to be brushed aside with contempt. I knew at once that this serpent Vritra was glacier ice. It was not the difficulty of fitting the Vēdic description of Vritra-Ahi and the rivers he surrounded and set free to flow when vanquished by Indra, with a dark rain-cloud and the rain-drops it loosens, that put the truth into my mind. As in other human dwellers of the plains, the leaden haze of the dark rain-cloud which is always with us and is the mainstay of our lives, had sunk deep into my brain and the cloud would not permit me to be fair to the Rishis, and I consoled myself for my want of common sense by imagining that the Rishis were silly savage children as they must have

been in the infancy of the human race. But I knew that Vipāṣ and Ṣūtūdri were the two rivers Beās and Sutlej. I knew they were fed by snow and ice, I knew that glaciers obstruct the course of the Sutlej and other Himālayan rivers and I knew that the glaciers of the Himālayas came down to much lower levels during times not far removed from us, as vouched for by the great Hooker in his "Himālayan Journals," and it was all this knowledge that flashed the idea into my mind that the serpent-surrounder of the waters must be glacier ice. I then sent for topo sheets of the Himālayan regions, and when I saw the glaciers variously named as they are in the Riks, when I saw the glaciers of the Alakananda valley drawing their sustenance from the stratified snow-beds above and filling the upper valleys with their uncouth tortuous bodies like serpents and crocodiles, I knew what the Riks meant by the word Ahi and I knew simultaneously what the Greeks meant by the Python destroyed by Apollo, the Hebrews by the Serpent that invaded Paradise, and the ancients and the first climbers of the Alps by the word Dragon. I remembered at once the lines of my favourite poet:—

'The glaciers creep
Like snakes that watch their prey, from their far fountains
Slow rolling on.'

How appropriate was the name the

ancient Rishis invented for the glacier! Cold-blooded, swallowing its prey in its jaws, creeping tortuously on its belly like a python, its back set with bands transverse and longitudinal, tapering towards the end as it descends to the lower regions, swallowing its victim alive and entire and digesting it leisurely and laboriously, adjusting itself to the varying width of the valley, with wide-opened jaws at the head of the valley known to modern science as the bergschrund and named by the Rishis Ahirbudhnya, the normal glacier is a python or serpent as the scientific genius of Professor Tyndall realised long after the transcendent poetic genius of Shelly. I make no apology for giving the following extracts from Tyndall's "Glaciers of the Alps":—

1. 'The stratified snow precipices, the glaciers issuing from the hollows of the eternal hills and stretching like serpents through the sinuous valleys.'

2. 'It lay couched like a reptile in a wild gorge as if it had split the mountain by its frozen snout.'

3. 'Immediately below is the Unteraar glacier with a long, black streak upon its back, bent hither and thither like a serpent in the act of wriggling down the valley.'

4. 'The glacier excited the admiration of us all: not as in summer shrunk and sullied like a spent reptile steaming under the influence of the sun, its frozen muscles are compact.'

As for the banded structure of a glacier, the same eminent authority vouches for it.

'At the base of the fall of ice, the ice undergoes an extraordinary transformation. It reaches this place more or less amorphous, it quits it most beautifully laminated. The wrinkling of the glacier was quite visible, the dwindling of the wrinkles into bands and the sub-division of these bands into lines which mark the laminæ of which the glacier at this place is composed.'

We now realise that Vritra's mother Dānu is the stratified névé or firn, made up of hard granular snow, that Ahirbudhnya is the great hollow at the head of the glacier and that Aja Ekapād or one-footed goat is the ice-fall. Dānu and Vritra are compared to a cow and its calf, the cow being above and the calf below. When the mother cows are separated from their calves by Indra's might, the cows low (anavanta gāvah), and curiously enough Tyndall says in the book above quoted that the little sounds consequent upon the rupture of the snow, reinforced by echoes from the surfaces of the granules, were blended to a note resembling the lowing of cows. The following extract from Griffith's rendering of the graphic description of Vritra in the thirty-second hymn of the fifth mandala will speak for itself:—

'Thou Indra laying the great mountain open, slaying the Dānava, didst loose the torrents . . .

Him as he lay there huge in length extended . . . still waxing in
The gloom which no sun lighted.'

What an accurate description of a glacier and the loosening of the snow-streams when the obstructing glacier is broken down, and yet this was supposed to represent the bursting of the rain-cloud by lightning and thunder. Examining Viśwāmitra's hymn closely it was clear that the 'payas' of Vipāś and Śūtūdri was melted snow and Vritra who lies couched in darkness, swallows up the heavenly streams produced by the melting of the snows by the sun. These waters are sometimes said to wander about in the recesses of Vritra.

'Vritrasya ninyam vicharantyāpah.'

These are, of course, streams which flow over Vritra, enter a crevasse, and wander about in the dark hollows of Vritra. Vritra's abdomen is said to engulf a mountain which no doubt rose as a nunatak. Professor Macdonnell in his "Vēdic Mythology" has marshalled in a masterly manner the characteristics of Vritra or Ahi as it is represented in the Vēdas.

"The 'serpent' is another designation of the demon Vritra who probably received his name as a formidable enemy of mankind enveloping his prey in his coils like a serpent. In several passages the words are in apposition and may be translated 'the serpent Vritra.' The waters are described as encompassed by the serpent. They are simultaneously said to

be swallowed by the serpent. Vritra has a hidden abode whence the waters when released by Indra escape overflowing the demon. Vritra lies, on the waters or enveloped by the waters at the bottom of the Rajas. He is described as lying on a summit when Indra made the waters flow, or as having been cast down by Indra from lofty heights. Vritra has fortresses which Indra shatters when he slays him. The word Vritra comes from the root 'Vr,' to cover or encompass. Poets several times speak of Vritra as having encompassed the waters or as being an encompasser of rivers. Vritra is also said to be an encloser of streams."

Of course, darkness is Vritra's element. He is the child of darkness. The north sides of mountains above the equator frequently bear glaciers while the south sides exposed to the sun bear none. Coming to other mythologies it is hardly necessary to say that Azhi of the Zend-Avesta and Verethra where it occurs in Verethraghna (Indra) are glaciers. I now come to the Python of the Greeks.

In the hymn of Callimachus to Delos translated by the Rev. J. Banks, M.A., the following description of the Python appears, and I rejoiced when I read it :—

'Nor yet is the tripod's seat at Pytho a care to me, nor yet hath died the huge serpent, but still that monster with dreadful jaws creeping down from Plistus, enwreaths snowy Parnassus with nine coils.'

I append a portion of the translator's explanatory note on the above passage.

'Apollo is here made to say that he has not yet killed the serpent Python. The Plistus was a river flowing through the valley of the Delphi.'

We know what it means to the villages below a mountain when a glacier usurps the bed of a sweet stream and advances with its irresistible ploughshare, and he who destroyed Python was the great Apollo, greater than Jupiter as Vishnu was greater than Indra, who like Vishnu that laid the foundations of the earth and was the essence of Chaitanya, laid the foundations of cities, was ever young and friendly to man, and dwelt in the eternal fires, whence he inspired the oracles.

In the hymn to Jupiter by Callimachus, translated by the same author, the following appears :—

'But not yet was the vast Ladon flowing nor Eurymanthus, clearest of rivers. As yet all Arcadia was unwatered since at that time (when Rhea loosed zone in childbirth), of a truth, above Carnion, moist though it now is, many serpents had made their lurking-holes and a man would go over Crathis and over pebbly Metope thirsting, though the plenteous water was lying 'neath his feet.' Comment is needless.

I now come to the fascinating account of creation given by the Masais, a tribe of East Africa. I very much regret I forgot to note

the name of the author or the periodical in which it occurred, but it was probably from the *Nineteenth Century and After* that I made notes of it :—

'In the beginning the earth was a barren wilderness in which there dwelt a dragon alone. Then God came down from heaven, fought the dragon, and vanquished it. From the dragon's blood which was water, the barren rocky wilderness was made fertile.'

That dragon unquestionably was the continental glacier out of whose destruction and *débris* the largest portion of the habitable portions of the earth have been fashioned. In the Masai legend it was a three-headed serpent that tempted the first-created woman Naiteyorob corresponding to the Biblical Eve, and the serpent was correctly described as a bright angel which preferred darkness and dirt to the pure air and bright light which clothed it with unpaintable beauty and radiance, pressed out the bright vivifying air of the heavens which purified and beautified it, shrunk into a *débris*-clothed reptile and sank into the dark gorges of hell. The angels were, of course, the effulgent snows, the brilliant beauties of the mountains. The snows by their pressure are compacted into firn and the latter give birth to ice-serpents descending into the dark valleys where they are chilled and hardened by darkness and pressure and blackened by stones and *débris* falling from the enclosing rock walls. Hence Vritras are dark, hard-skinned Dāvsas

made up of ice, erratics, dust and *débris*, while the snows are soft, bright-complexioned, spotless, and unstained. Intrinsically there is no difference between angels and devils. What makes the difference is heaven's light and air. Aryā' Vritras take an intermediate place between Dāsas and snows. I now close this chapter and will answer in the following one the question, 'Where do you find these angelic snows which became Dānus and gave birth to these monstrous and terrible serpents ?'

CHAPTER II.

RUDRA, PRISNI AND MARUTS.

When the Maruts were questioned about their lineage, they declared that Prişni was their mother and Rudra, the impetuous, their father. I had a firm belief even when I was a schoolboy that Rudra was lightning, and that was confirmed by a study of the few Vēdic hymns solely devoted to his praise. I was familiar with the Rudra section of the Krishna Yajus Samhita, which is my family Vēda, and I knew that the fierce god who dazzles and shoots his arrows, who glares with a thousand eyes and has hundreds of quivers full of arrows, who kills cattle, and who marks out the tallest men for his shafts, was undoubtedly lightning. He is pre-eminently a god both beneficent and destructive, and when he marks you out from his station above, there is nothing to be done but to prostrate and to keep prostrate with outstretched arms as low as the earth will permit, till his blazing eyes are turned elsewhere. The Rudra section, therefore, begins with prostrations, and prostrations run right through the long chapter, as prostration is the sole and only means of propitiating this brilliant deity who from his

vantage ground on high, deals out instantaneous death. But Parjanya is also the thunder-cloud. The Vēdic hymns to Parjanya, though few in number, give an accurate description of a rain-charged thunder-cloud, its lightnings, thunders and fertilizing powers. There is no reference to Rudra or the Maruts in the Parjanya hymns, but the Maruts are distinguished from Parjanya as favouring us with heavenly showers, as producing the water-bearing Parjanya and darkening the day thereby, and as driving Parjanya along the Rōdasi. The Maruts are described as sun-skinned, self-luminous, spotless, brilliant, beautiful, the beauteous boys of heaven, bright children playing in balconies, never quarrelling with one another, accumulating in great masses like great hills, and marrying a common wife Rōdasi. They are arranged in troops and battalions and their rush is irresistible, shaking the heavens and earth. Why anybody should have imagined that the Rishis raved about rain-drops in this fashion when sane scientific men and staid soldiers like Sir Martin Conway describe the snows in rapturous language, applying the identical epithets the Rishis have used, is inexplicable but for the fact that the leaden rain-cloud has sunk deep into our souls generation after generation. It is particularly hard on the self-luminous dustless Maruts that those who owe their bright white skins (of which they are naturally proud) to their proximity to the

Maruts, should not recognise their benefactors and confound the calm wondrous white cherubim with leaden dusty rain-drops from a black rain-cloud. I must, however, to satisfy the general reader, furnish proof from Vēdic scholars and extract the following from Professor Macdonnell's "Vēdic Mythology":—

'The Maruts are prominent deities in the Rig Vēda. They form a troop or Ṣardhas of deities mentioned only in the plural. The cow Pṛiṣni is their mother. The cow presumably represents the mottled storm-clouds, and the flaming cows having distended udders with whom they come can hardly refer to anything but the clouds charged with rain and lightning. When born from Pṛiṣni, the Maruts are compared to fires. They are also said to have been born from the laughter of lightning. They are called sons of heaven and heroes of heaven. They are brothers of whom none is eldest or youngest. They have grown together and are of one mind. They are spoken of as dwelling in the three heavens. They are also once described *as dwelling in the mountains*. Their connection is closest with the goddess Rōdasi . . . she appears to have been regarded as their bride.'

'The brilliance of the Maruts is constantly referred to. They are golden, of sunlike brightness like blazing fires, of ruddy aspect. They shine like tongues of fire. They have the form or brilliance of Agni with whom they are compared in brightness. They have the

brilliance of serpents. *They shine in the mountains.* They are self-luminous—an epithet almost exculsively applied to them. They are frequently spoken of in a more general way as shining and brilliant. The lightnings shine down on earth when the Maruts shed their ghee. The lightning lows like a cow when they shed their rain. They are like lightnings shining with rain. Lightning is so characteristic of them that all the five compounds of Vidyut in the Rig Vēda are connected with the Maruts. Their lances are often mentioned. they are lightning-speared, and they have golden axes. The Maruts are decorated with garlands and other ornaments. Armlets or anklets are an ornament peculiar to them. With these they shine like the sky with stars and glitter like showers from the clouds. They have spears on their shoulders, anklets on their feet, golden ornaments on their breasts, fiery lightnings in their hands, and golden helmets on their heads. They have spotted steeds—an epithet which is several times and exclusively connected with the Maruts. They surpass heaven and earth, are immeasurable in greatness, and no others can reach the limit of their might. The Maruts are young and unaging. They are divine, vigorous, impetuous, without soil, and dustless. They are fierce, irascible, terrible, of terrible aspect, of fearful form, and are terrible like wild beasts. They are playful like children or calves. They are black-backed swans.' (*N.B.*—It was quite

natural for Professor Macdonnell to render Varsha (shower) by rain, but why he made out blue to be black is more than I can understand. The original is " ā hamsāsō nīlaprishṭha apaptan "—the blue-backed swans fell down. I will continue the extract. ' The noise they make is called thunder: but it is also the roaring of the winds. At their coming, heaven, as it were, roars with fear. They are often described as causing the mountains as well as making the earth or the two worlds, tremble. With the fellies of their cars they rend the mountains or the rock. They rend trees and like wild elephants devour the forests. The forests bow down before them through fear. Resistless as mountains, they cast down terrestrial and celestial creatures. The sweat of the sons of Rudra became rain. The rain shed by the Maruts is referred to as milk-ghee. They cause winds and lightnings and with their might, milk heavenly gifts from the udder, and fill the earth with milk. As shedders of rain the Maruts receive the epithet ' Puru Drapsah,' abounding in drops.' (*N.B.*—The epithet means ' having big drops. ')

' They are said to have the wrath of the serpent. Like Agni they are several times said to be pure or purifying.'

I may at once say that ' Rukma ' is not ' yellow,' but ' ruddy.' It is applied to red gold as distinguished from ' Hiranya,' yellow gold. Of course, the snows are pure and unspotted, as every one knows, they burn like strontian

flames in the sun, the snow cornices in the shoulders of mountains hang like spears, they are many of them six-rayed stars, and they have ruddy fronts when flushed by the sun, and in any book on the Alps readers may find a record of their might in storm and avalanche, and their indescribable beauties and many-coloured radiance in fair weather, which the Rishis have accurately described. The snows sometimes shower hail which resemble the fruit of the *Ficus religiosa* (Asvattha) and avalanching mixed masses of ice and snow, they partake of the nature of serpents. Dānu, Vritra's mother, is snow, hardened to a granular consistency. The Maruts are Sudānus or good soft snow fields as distinguished from beds of hardened névé. The Sudānus, of course, give rise to Arya Vritras lying in the open, high above the gorges, and thus we have every stage of the transformation of the bright, high-crested, ruddy-chested warriors full of the breath of life, revelling in the light and open air, with spears glittering from their shoulders, and legs adorned with gleaming icicles 'which seem to be hung for the very purpose of sublime adoration,' into the chill viscous creeping serpent loving the dirt, *débris* and darkness of narrow gorges. We now see what the Rishis meant by Maruts, Sudānu, Arya Vritra and Vritra. Dasyus are, of course, slippery erratics which, under cover of Vritra, travel in the darkness, and literally lay waste cultivable lands. Rudra is the electricity

with which the atmosphere in the high mountains is charged and is associated with the production of snows as distinguished from Parjanya. Rōdasi, the common mistress, with whom the snows mix indiscriminately, which they make their special seat (sadas) is always a dual. Rōdasi is also the seat of Ahirbudhnya or bergschrund. Rōdasi is, therefore, a great snow pass where, by preference, the snows accumulate in huge masses. Rudra and the Maruts are great healers and medicine-men as a snow-storm accompanied by copious discharges of electricity clears and purifies earth and air and makes medicinal herbs spring up like magic. This effect is specially associated with Rudra who, the Rishis realised, was the 'doctor of doctors.' ('Bhishaktamam tvām bhishajam śriṇōmi.') The Maruts are a fascinating study and great is the temptation to write down extracts from poets and scientific men, but I restrain myself. The lofty, high-born, delicate lady with her translucent brilliantly-coloured veil who produced these glorious sons by marrying the dazzling Rudra, the impersonation of virility, requires, however, special homage and attention. Let Mr. Arthur W. Clayden answer from his "Cloud Studies." She is the cirrus cloud with her brilliant veil lit up by halos known as mock-suns and mock-moons. Her dress is made up of the thinnest filaments, the fibres crossing and interlacing, radiating in fan-like manner, and curling and twisting like a well-trimmed ostrich feather.

This great lady never descends to the earth, but ever floats above the highest mountains, occasionally descending to the tops of the mountains to meet her consort Rudra. Her semi-transparent skin never causes a shadow on the landscape. To those who wish to know more about this great lady who produced the brilliant soldiers of fascinating form, dread might and disciplined valour, I recommend a study of the delightful volume from which I have made the above extract. These brave sons of Prişni, the bright-spotted lady, fashioned of detached cloudlets, are reckless from their infancy. They are not afraid to be born while their mother is moving about, according to the mightiest of the later Rishis, and purify themselves of all dirt while yet in their mother's womb. Rudra is Triambaka having three wives, the high-throned Prişni, the alto-clouds next in rank, and the stratus-clouds constituting his inferior wife. They all produce Rudras, but Prişni's children are the perfect jewels. His wives are necessarily his sisters and marrying sisters is prohibited only to men. It goes without saying that the ruddy chest of the Maruts is the front of Mars that threatens and commands, and that Mars and the Maruts are identical. Sir Thomas Holdich has described the Himālayan snows which in serried battalions guard the gates of India. The effects of a snow avalanche which is the Rishis' sudden movement of the Maruts without car or horses, is thus described in " The Story of Ice " by W. A. Brend.

'In spring and summer especially, sheets of snow break away from their positions and tumble headlong down the valleys sweeping away trees, rocks and homesteads in their progress. Further harm may result from the blocking of streams or rivers which happen to cross its path giving rise to disastrous floods. The sudden movement of a vast mass of snow, perhaps hundreds of thousands of tons in weight, through a narrow ravine frequently gives rise to a violent blast of wind. Men and animals have been carried through the air and buildings blown down. Once a sledge with the driver and horse was swept by the whirlwind for three hundred yards and then deeply buried in the snow. In wooded regions branches are broken off and even entire trees borne down by the weight of the snow which accumulates on them. A curious effect of wind and snow has been noticed. The little crystals of ice of which the flakes of snow are composed, driven at a great rate through the passes, act like saws upon the trees, wearing away the bark and foliage and even cutting into the wood.'

Professor Tyndall speaks of 'long spears of ice and fretted cornices from which depended long clear icicles tapering from their abutments like *spears* of crystal.' The Vēdic Rishis are sufficiently justified and let us see how the Greeks described Mars. In Callimachus' hymn to Delos, the river, Peneus describes Mars as below:—

'Behold from far what a watcher keeps a look-out from the topmost part of the mountain who would with ease tear me out from the lowest depths. . . . For thy sake I will endure the day of fate having the ebbing channel dried up. . . . But Mars having lifted the uprooted peaks of Pangaeum was about to hurl them into his tide and bury his floods beneath them. Then from on high he rattled and struck his shield with the point of his spear. So it clang like a warlike sound. Trembled the mountains of Ossa, the Cranoian plain and the stormy edges of Pindus. The whole of Thessaly danced with fear.'

The watcher keeping a look-out from the topmost part of the mountain is, of course, a sentinel aiguille peering into the valley and threatening snow avalanches on whoever dared to scale the heavens. His spear is a snow cornice which is loosened, strikes on his chest (snow-slope), and starts an avalanche which with thunderous rattle aided by furious winds shakes and overwhelms everything. A graphic description of a snow-avalanche is given in Hesiod's "Shield of Hercules" and I quote it:—

'As when from high ridge,
Of some hill-top abrupt tumbles a crag
Precipitous and sheer a giddy space
Bounds in a whirl and rolls impetuous down,
Shrill rings the vehement crash till some steep cliff
Obstructs: to this the mass is borne along

This wedges it immovable even so
Destroyer Mars. . .'

The above quotations are from the book of the Rev. J. Banks referred to above. Of course Mars and the Maruts are destroyers. They have a thousand tricks as those who have toiled among the Alpine snows know. They not only overwhelm everything, but they are also masters of strategy. They lure you to their frail snow-bridges and precipitate you into crevasses. They trip you up by the feet, pounce upon you like robbers and strip you of everything. They have innumerable manœuvres which the Rishi describes in his own quaint way in the Rudrādhyāya of the Yajus. I will close this chapter with a quotation from Tyndall, which will naturally lead us to the next:—

'Surely if beauty be an object of worship, those glorious mountains with rounded shoulders of the purest white, snow-crested, and star-gemmed, were well calculated to excite sentiments of adoration.'

CHAPTER III.

DYĀVĀ PRIṬHIVĪ OR HEAVEN AND EARTH.

These are associated constantly, and are expressly declared to be father and mother. Several heavens are frequently referred to and a great heaven is also referred to as Brihaddiva. This great heaven is the seat of the greater gods, the seven sons of Aditi and Savitar, the chief of whom are Indra, Varuṇa, Mitra, and Aryaman. The great priest Aṭharvā who declares his body to be identical with Indra is a 'Brihaddiva' or belonging to the great heaven. Ūrvasi, the celestial nymph whom Purūruvas, the ancestor of the human race, captured and made his wife, is similarly called Brihaiva. Dyāvā is the birth-place of the gods and Dēva means the son of Dyāvā and the gods are expressly called sons of Dyaus. Dyāvā is the Asura full of the breath of life. Dyāvā contains 'Rajāmsi' and the Rajas or dust is arranged in strata (Vimāna). Between the Dyāvā above and the Priṭhivī below are in descending order the Rōdasi, the Rajas, and the Antariksha. The Antariksha (literally, 'visible in the middle' or between Dyāvā and Priṭhivī), the middle region, is the region of trees or Vanaspatis.

'Vanēshu Vyantariksham tatāna.' [He

(Varuna) spread the Antariksham in the forests.] We already know the Rōdasī in which the Maruts pile their splendours. Dyāvā is therefore a snow range, the dual lady Rōdasi is the pass where two transverse valleys meet, the Rajas is the region of dust and *débris* variegated by Ōshadhis (plants and herbs) and Antariksham is the forest belt. Parvata is a massif and Giri a hill. Dyāvā is a range of snow-clad peaks and Brihaddiva is a dominant central chain of crystalline massifs (Parvatas). That Brihaddiva is made up of great massifs (Parvatas) is clear from verse 5 in the fifty-fourth hymn of the delightful singer Vāmadēva in the fourth mandala of the Rig Vēda. The god Savitar who produced the great gods has three heavens, and the verse above referred to explicitly states :—

'Out of great mountains (Brihadbhyah parvatēbhyo) you produced those of whom Indra is the greatest and made homes for them over (a foundation of) pastyās.'

Priṭhivī is, therefore, a longitudinal valley. Atri correctly described Priṭhivī as made up of the hollows of mountains (Parvatas). 'Baḍiṭtha Parvatānām Khidram Bibharshi Priṭhivī.' Agastya, in his hymn to heaven and earth, declares that Dyāvā and Priṭhivī alternate like day and night and roll up and down like a wheel. To call the blue sky 'heavens' in the plural is patently inappropriate. The sky does not alternate with the earth. The valley is dark, and the range is bright and the

shining range alternates with the dark valleys in endless succession and the analogy with day and night is appropriate. So is the analogy of a wheel rolling up and down. The Dyāvā has a basement, it was firmly fixed with pillars by sundry gods, chiefly by Indra, Varuna and Vishnu, and it stands up against the Prithivī. Dyāvā is derived from 'Dyu,' to shine. It is literally the shiner. Dyu is the shining day, but the blue void which does not shine of itself may not be called the shiner. To talk of pillars and basements, in connection with the sky is meaningless. Of course, Dyāvā is the great mountain range shining with the self-luminous Maruts, smiling upon us through the cloud region and the Rōchanās (literally 'glitterers') are the glittering peaks that crown the range. Thus the Rishi says :—

'By Indra were the glitterers of heaven (Rēchanā divah) firm, compacted, and permanent scattered far. When in the intoxication of Sōma Indra cleft Vala, the glitterers of heaven were scattered over the middle region (Antariksha).'

When you reach the lofty heights, you feel you are not of the earth. You vividly realise the mountain tops are heavens and the maze of valleys are the caverns of hell. The quaint monk of Canterbury went up the mount of Jove, and he reported :—

'On the one hand looking up to the heavens of the mountains, on the other hand shuddering at the hell of the valleys, feeling

myself so much nearer heaven that I was sure that my prayer would be heard.'

Take Praskaṇva's hymn to the dawn:—

'She is desired to come with good things even from the glitterer above the heaven.' 'Divaschid Rochanādadhi.' 'Dawning fully with your rays, you illuminate all the world of glitterers.' The dawn is, of course, the daughter of the mountain. She first illuminates the glittering peaks and then comes down to the men in the valleys. (Mandala I, Hymn 49, Verses 1 and 4.) Dyāvā cannot mean the dark blue sky and the Rōchanās cannot be stars, which grow dim with the brightening dawn. To the dweller in the mountains the dawn is born in the high range, first setting ablaze the shining peaks, then the gateways of heaven (Diva ātāsu Vyanjatī) which are the passes, before she comes down to the humble mortal in the valleys. A snow-range, blue in the far distance and melting into the sky with glittering peaks does bear a close resemblance to the blue void illuminated by stars. Bathed in sunlight which is reflected a thousandfold by the self-luminous snows, a mountain range is appropriately called 'Dyāvā or Shining'—an epithet to which the blue void has not equal claim. The fresh upper snows according to Professor Tyndall emit a blue light, and I quote the following from his "Glaciers of the Alps":—

'I was continually surprised and delighted by the blue gleams which issued from

the broken or perforated stratum of new snow. Each hole made with the staff was filled with a light as pure and nearly as deep as that of the unclouded firmament. As his feet rose out of the snow and shook them off in fragments, sudden and wonderful gleams of blue light flashed from them. Doubtless the blue of the sky has much to do with mountain colouring, but in the present instance, not only was there no blue sky but the air was so thick with fogs and descending snow-flakes that we could not see twenty yards in advance of us.'

The Rudras are said to possess blue necks (Nīla-grīvās) in the Rudrādhyāya.

'When the Creator under the waters (apām napāt Savitar) began his creation where the sea with fixed shores began to recede, first the land (Bhū) rose out of the waters, then there was dry sediment (Rajas) and then the heaven and the earth multiplied.' So Viṣwakarman began to multiply the earth and heaven when the old shorelines hardened.

'Yatrā Samudrah Skabhitō Vyaunat apām
na pāt Savitātasya Vēda
Atō bhūrata ā uṭṭhitam rajah atō dyāvā
priṭhivī aprathēthām.'
(Mandala X, Hymn 149, Verse 1.)

'Yadā hyantā adadrihanta purvē ādiddyāvā
priṭhivī aprathēthām.'
(Mandala X, Hymn 82, Verse 1.)

Griffith has rendered 'Purvē Antāh' by 'eastern ends' while the context which was

not understood by him shows it means the old or former edges or shorelines.

The Dyāvā Pṛithivī of the Riks and the heavens and earth of the old mythologies are the snowy ranges and their *corresponding longitudinal valleys*. It goes without saying the snowy range is the father and the valley the mother. The father melts and the living waters charged with fertilising silt impregnate the Pṛithivī and produce life on her. The crystalline mountains cannot themselves produce life, but supply the vivifying liquid which flows into the Pṛithivī. A mountain and valley are, in the highest sense, 'father and mother' to living creatures. To us in the plains even hills which catch up the rains and send them down in torrents charged with the disintegrated substance of their body are fathers of the valleys below and deserve reverence as fathers. India is blessed with the mightiest of fathers, the mighty chain of the Himālaya, and my countrymen of Northern India may appropriately include Father Himālaya, the wide-stretched seat of Rudra and his children, in their songs of honour to Mother India. This idea of the fatherhood of snow-ranges and the motherhood of the great primary valleys is so natural that I wondered I never came across it in the course of my reading, scanty as that has been, but quite recently I read in a delightful book of exploration called "The Andes and the Amazon" by Reginald Enoch, the following, conceived in the common-sense spirit of the Rishis:—

'Let us ascend and cross the huge cordillera of the Andes, the father of the country; for the Andes is its source of life, the *raison d'être* of its being.'

The Rishis saw the gods created, fed and strengthened them, and shared their beneficence. They did not see the heavens and earths created. They speculated on their origin in the tenth Mandala and concluded that the great ranges and the primary valleys were created by Viṣwakarman and that the Universal Architect, creating *from under the waters*, produced them. So, too, in the beginning 'God created the heavens and the earth' in the Old Testament. So it is in most mythologies. Aditi is the firmament of the Bible as distinguished from the cut-up Diti on the other side of a 'divide.' The waters above the firmament are the snow-ocean, which is the *Okeanos* of the Greeks whence pure rivers flow, as distinguished from the waters below the firmament, collected in the briny sea. The Yajur Vēda expressly declares 'Dyaus Samudra Samam Saras.' 'The snow-range is a lake equal to the sea and the range with its crests and hollows is a sweet-water ocean lashed into fury by a storm and overspread with foam and suddenly stilled by the Almighty as the great Ruskin again and again impresses on us in his wondrous work of genius, "The Modern Painters." The higher mountain ranges, such as the Alps, the Andes, and the Himālayas, are set upon an *elevated tableland*,

which is the Aditi of the Rishis, Diti being the precipitous slope above a sea or a desert. Now we understand the swallow myth, and the great serpents that covered up heavens and earth and united them in a close, never-ending embrace.

I give below for the convenience of those unfamiliar with the Vēdas and Physiography, an explanatory table of the Vēdic words given above with the meanings:—

Bhū	... Land.
Aditi	... Elevated tableland. High plateau.
Diti	... The precipitous side of a 'divide.'
Dyāvā	... A snowy range.
Rōdasi	... High snow-pass.
Rajas	... Region of rock-*débris*, which sometimes develops into lovely Alps, the Oshadhi Region and Swarga of the Riks.
Antariksha	... Mid-region or forest-belt.
Pṛthivī	... Great longitudinal valley in a line with the strike of the range.
Vritra-Ahi	... Glacier.
Dānu	... Névé beds.
Rudra	... Atmospheric electricity in the higher regions.
Maruts and Rudras	... Snows.
Sudānu	... Easily melting snow-field.
Dasyu	... Erratic blocks.
Dāsa Vritra	... Vritra darkened and hardened by morainic material.
Arya Vritra	... A glacier of pure ice.
Ahirbudhnya	... Bergschrund.
Aja Ēkapād	... Ice-fall.

Sindhu, where it is used as generic for river, is a stream of melted snow. The Aṭharvaṇa Vēda says that the names of rivers are Sindhus and they became Nadis (noisy ones) when Indra broke up Vritra and they cataracted down the valleys. That is an appropriate distinction between the pure snow-stream and the noisy river where it enters the valley and gallops till it emerges as a Vāhinī in the plains. It is clear from all this that the old Rishis invented their own common-sense technique out of their limited vocabulary for physical features of the earth with which the plain-dweller is not familiar, and that without realising this fact scholars have vapourised the hard serpent into the dark cloud, though both are substantially the same, and the great solid granite ranges at once beautiful and terrible, destructive and beneficent, into the unsubstantial void called 'Nabhas' by the Rishis. Now this discovery of the identity of father heaven with a mountain range and mother earth with a primal longitudinal valley possesses the greatest significance, and if my education, poor as it was, had not been mostly literary, I should have unravelled all the tangled mysteries of the Riks. As it was, while I had a correct conception of the swallow myth, how the monstrous serpent froze the waters, swallowed the waters and bunded up the waters created by the melting of the snows, and froze life and sunlight out of the valleys, I could not make out how the heaven

and earth were separated, how the gods were produced and how the glaciers were destroyed. I may add for the benefit of some of my readers that in the hottest plains we can have no conception of the intolerable heat of the sun, direct and reflected, on the high mountains, how the snow under its influence passes into vapour without passing through the intermediate liquid state, and how at midday, as a man walks, one side of the face may be blistered while the other in the shadow gets frozen. By this time, however, I realised that the Rishis were not children, that we, their children treated them too lightly, and I was even satisfied they lived during the glacial period, saw the dread serpents creeping down the valleys, freezing life and sunlight out of the habitable surface of the earth, survived the crisis, and witnessed the destruction of the serpents and the creation of light and life out of the chaos of *débris* and waters resulting from that destruction. I must add some description to show what sort of castles (Puras) they were in which the serpents were entrenched. At the head are the wide gaping jaws of the bergschrund and innumerable fissures all over the body like the jaws of hell into which a slippery, erratic or a frail snow-bridge (Durādhya sētu) may precipitate you and slowly squeeze life out of you in its gloomy and horrible entrails making saliva out of your animal heat the better to digest you. Round the neck (ice-fall) are lowering seracs, 'detached

towers of ice of the most picturesque and imposing character.' Quoting Tyndall again:—

'These towers often fall and while some are caught upon the platforms of the cascade, others struggle with the slow energy of a behemoth through the *débris* which opposes them, reach the edges of the precipices which rise in succession along the wall, leap over, and amid ice-smoke and thunder-peals fight their way downwards.'

Note the ice-smoke and thunder-peals. They are the mist and booming of Vritra when Indra attacked him. Round Vritra were precipitous walls which kept out the sun, carved into many a castellated tower, bastion, and battlement, a vast fortification from which rocks and stones were shot out which are food and armour to Vritra, but death to life. And then there were the lateral moraines, the medial moraines which in a many-headed dragon might reach a hundred as in the case of Dāsa sambara, and the terminal moraine with its arched ice-cave (Udavraja), some of them hundreds of feet high. Thus entrenched and defended, overlaid with tough stony till and crammed with slippery stones and boulders, the insatiate coiler challenged Indra to do his worst. Who was Indra that fought and vanquished the serpent? For a whole year I groped in the dark. I knew the destroyer of the great serpents could not be their eternal enemy, the sun. The Rishis had given such a rational, accurate, and unexag-

gerated description of a stupendous phenomenon contrasting favourably with the ravings of moderns about the petty snakes that lurk in the low Alps, that I was sure they would have called Sūrya or Sūra a Vritraghna in the hymns devoted to him, if he really destroyed the glaciers and set free the obstructed rivers, and they would have told us how the snakes shrivelled up under his hot, steady and tireless gaze, and how like a leopard or hyæna (śvaghni) he returned to his kill and sliced the serpent bit by bit through many a millennium. There was no question of rain-storms, as in that period of intense cold there would be only snow-storms which would only contribute to the growth of the glaciers. After all, the glaciers were there in spite of the sun and if the sun destroyed them it must have been slowly and imperceptibly and progressively in the course of ages and the mighty din of Indra's battle that has resounded through the ages as prayed for by the Beās and Sutlej, the thunder, the lightning, the shaking of the heavens and earth, mountains and hills, was altogether meaningless as a description of the steady and slow shrinkage of the glaciers under the influence of the sun. In the high mountains the sun is practically powerless except during the middle stage of his daily activity (Madhyā kartōh) when he is high in the heavens (Dēvatvam) and of great might (Mahitvam). That midday sun, I discovered, was the Pūshan of the Riks, the Āghrini (the very hot), the

Vimuchō napāt at whose coming everybody stops work, Dhiyamjinva, the sweller of streams who made the highest heaven his seat, went round the houses of the gods gazing from on high, flourishing his many-thonged whip, fissuring the rocks with his awl, and creating fertility. He is the god of herdsmen in the high Alps and the agriculturist in the higher glens. He is Pūshan, the crop-ripener *par excellence*. It is when he arrives, that stolen, strayed and mixed-up cattle are discovered and a man can tell his neighbour positively, 'these are mine.' Pūshan has two forms like day and night, one white (ṣukra) and the other melting (hot though dark). He is drawn by goats, jumps down precipices from his high station, unlike the morning and evening sun which travel on slopes and are broken by shadows. This Pūshan who loosens everything with his awl is Indra's friend and helped him to destroy Vritras. It is the great Bharadwāja that has brought out in full these characteristics of the midday sun who was everything to the herdsman and agriculturist in the Rajas, Vrijana (cross-valley) and the Variva (glen). Let us now proceed to consider who this Indra is, to whom the sun in his midday height and glory played the part of a humble helper whom many Rishis neglected as men are wont to neglect silent faithful servants ever ready for duty at their appointed time and place, and whom Bharadwāja condescendingly assured he would not cheat him out of his dues. I will

end this chapter by a few extracts from the great Ruskin, illustrating the power of the cloud even over one who saw deeper into the root of things than most men. In para 8, Chapter 6, Part V of his "Modern Painters," Ruskin says :—

"I would desire, therefore, to receive God's account of His own creation as under the ordinary limits of human knowledge and imagination it would be received by a simple-minded man ; and finding that the heavens and the earth are always spoken of as having something like equal relation to each other ('thus the heavens and the earth were finished and all the host of them'), I reject at once all idea of the 'heavens' signifying the infinity of space inhabited by countless worlds. But I suppose the heavens to mean that part of creation which holds equal companionship with our globe. I understand the 'rolling of those heavens together as a scroll' to be an equal and relative destruction with the 'melting of the elements in a fervent heat'; and I understand the making of the firmament to signify that, so far as man is concerned, most magnificent ordinance of the clouds—the ordinance that as the great plain of the waters was formed on the face, so also a plain of waters should be stretched along the height of air and the face of the cloud answer the face of the ocean ; and that this *upper and heavenly plain* should be of waters as it were, *glorified* in their nature."

When Ruskin could not see that the *upper heavenly plain* of *glorified waters*, *the firmament*, is the great elevated tableland (Aditi) of snows, and that the heavens and earth and *the host of them with equal relation to each other* are the great mountain chains and their corresponding longitudinal valleys, when he makes out the most magnificent ordinance of *the snows* on the *firmament* to be the *veil* of *clouds* that conceals the heavens from the valleys, lesser mortals may be excused for their succumbing to the cloud. Ṣunaṣṣēpha, who was embogged (Drupadēshu baddhah) put it in a nutshell when he prayed that he might be restored to Aditi so that he might gaze on the father and the mother (Dyāvā Pṛiṭhivī).

CHAPTER IV.

INDRA.

As I remarked in the Introduction, it was while I read the Agni hymns that a suspicion dawned on me as to the true nature of Indra. Agni too is frequently called Vritraghna both by his own power and in association with Indra. All trials of life are as nothing to the intense strain of struggling for existence amid the deadly cold. Fire in the ordinary sense was precious above all things and the sun being weak, fire naturally dominated the souls of the Rishis. He was the Hōta or the heater, a word identified with God. He was the Yajata or melter, and these words correspond to the Zaotar and Yazata of the Zend Avesta. He was also Yahva or bird, as he blazed up like a bird. There can be little doubt that this is the Yahve of the Hebrews. He is the Grihapati (Lord of the house) and it was natural that the Rishis should concentrate all their affection on his life-preserving warmth and shower a thousand endearing epithets on him. Sōma, equally rooted in the Rishis' affections, I took to be Panax Ginsheng, about which I had read as follows :—

'The Chinese prize it so highly as a

stimulant, etc., that they will pay for it its weight in gold. It wards off fatigue, invigorates the enfeebled frame, restores exhausted powers and rejuvenates the old. Doctor Smith mentions cases in which life appears to be prolonged by its use. The Chinese believe firmly that life can be indefinitely prolonged by its use.'

I thought that fire and Ginsheng (Agni and Sōma) enabled the Rishis to tide over the glacial period. The one kept them warm and melted the ice for them, the other was a stimulant and food, prolonging their lives. But these were in my unregenerate days when I thought of the Rishis as western scholars had taught me to think. Extraordinary assertions were made about Agni. He was identified with the great gods, he was born thrice—in the high heavens, in the Rajas and in the waters—and once again above the Pṛthivī. I examined the Agni hymns with some care and found that his movements as messenger between heaven and earth and between the mortals and the immortals were underground journeys, that he was established firmly in a platform (Adhvara), fed with ghee, fat, Sōma, firewood, and every kind of combustible, invoked to take up the offerings—identical with his food—to the gods through the Dēvayāna paths and to bring down the gods to help the Yagna. All this is meaningless when applied to a household fire kept up with difficulty in icy surroundings, and equally meaningless when applied to

a forest fire. A forest fire itself, amid great glaciers, is practicably unthinkable and when Agni is desired to go to the Rōdasi (pass), ordinary fire is absolutely out of the question. He is constantly designated like Indra, who is called his brother, 'Sahasah Sūnu,' or child of pressure. When reading the 6th, 7th and 8th hymns of Bharadwāja, son of Brihaspati (the preceptor of the great gods), it struck me that the description of Agni contained in them—imperfectly as they were then understood by me—could apply only to volcanic fire and that Indra might be a mighty volcano. *So it was.* Indra was a mighty volcano and, reading the Indra hymns, the truth shone clear as daylight, though the far more obscure hymns to Agni first suggested it. Here then is the central fact of the Riks. The surface of the earth, the seat of life, was concealed from her vivifying lord, the sun, and weighed down by serpents, and in response to her *pressure*, her father Viṣwakarma raised up mighty volcanoes which fought the glaciers, lifted up the earth, loosened the rivers, cut out new beds for them high above the old rivers overwhelmed by the glaciers, fertilised her and restored her to the embraces of her distant husband. There in a nutshell is the Rig Vēda. Before unravelling the details of the process I will ask the reader to cast his eyes over the great Antarctic ice sheet, the serpent Anantha. There, where Anantha reigns supreme, two volcanic peaks rear their heads above the ice. They

are Mounts Erebus and Terror. Of these, Terror is shorn of its terrors and the serpent thrusts in his cold tongues into the crater and challenges Agni to come out and fight if he can. Ngai is, it would appear, the Masai name of God. In the Antarctic continent Ngai permits the dragon to reign alone and render the earth a barren wilderness sepulchred in cold ice. The living Lord (Agni) does occasionally come down from the Erebus Mountain to warn the watery serpent of his coming destruction. How curiously, by the way, does Ahi, Azhi, suggest 'ice' and Vritra the word 'water' born of him. In a few millenniums it is not unlikely the Lord will transfer the northern hemisphere to the overlordship of the serpent and establish life and the light of the day in the southern hemisphere. What was the Masai conception of God, Ngai as he was called? I quote from the article I have already referred to:—

'Upon the summit of Dingogeri, the thunder peals, and the storm rages, as the voice of God proclaims his law from a cloud.'

Nothing could be more like Moses upon Mount Sinai, and as the Old Testament is the basis of the Christian and Mahomedan faiths, I will give it the place of honor in advancing specific proof of the identity of the Central Fire with the God of all the nations.

I extract the following from Chapter XIX of the Book of Exodus:—

'And Moses went up unto God, and the

Lord called unto him out of the mountain, . . . For . . . the Lord will come down in the sight of all the people upon Mount Sinai. And thou shalt set bounds unto the people round about, saying, Take heed to yourselves that ye go not up into the mount, or touch the border of it: whosoever toucheth the mount shall be surely put to death: There shall not an hand touch it, but he shall surely be stoned, or shot through . . . when the trumpet soundeth long, they shall come up to the mount. . . . And it came to pass on the third day in the morning that there were thunders and lightnings, and a thick cloud upon the mount, and the voice of the trumpet exceeding loud; so that all the people that was in the camp trembled. . . . And Mount Sinai was altogether on a smoke, because the Lord descended upon it in fire: and the smoke thereof ascended as the smoke of a furnace, and the whole mount quaked greatly. And when the voice of the trumpet sounded long, and waxed louder and louder, . . . And the Lord came down upon Mount Sinai, on the top of the mount: and the Lord called Moses up to the top of the mount; and Moses went up. And the Lord said unto Moses, Go down, charge the people lest they break through unto the Lord to gaze, and many of them perish. And let the priests also which come near to the Lord, sanctify themselves, lest the Lord break forth upon them. And Moses said unto the Lord, The people

cannot come up to Mount Sinai: for Thou chargedest us, saying, Set bounds about the mount and sanctify it. And the Lord said unto him, Away, get thee down, and thou shalt come up, thou, and Aaron with thee: but let not the priests and the people break through to come up unto the Lord, lest he break forth upon them.'

Then come the great commandments during the delivery of which there were the thunderings, the lightning, and the noise of the trumpet, the people stood afar off and told Moses to speak unto the Lord. Moses drew near unto the thick darkness where God was.

'And the Lord said unto Moses: Thus thou shalt say unto the children of Israel, Ye have seen that I have talked with you from Heaven. . . . An altar of earth thou shalt make unto me and shalt sacrifice thereon thy burnt offerings, and thy peace offerings, thy sheep and thine oxen: In all places where I record my name I will . . . bless thee.'

When the Lord took Moses and the Israelites out of Egypt through the Red Sea, he went before them by day in a pillar of cloud to lead them the way, by night in a pillar of light to give them light. Moses and his people followed the Lord and his advancing pillar (fiery by night and cloudy by day) till they came to the seashore; the Lord divided the sea, Moses and the Israelites passed over dry ground into the midst of the sea with the waters walled up on either side, but by the time

Pharaoh and his multitudinous host could cross over, the Lord moved away, the waters of the sea returned, and engulfed his host. Now, who is this Lord and what are the phenomena attendant on his appearance, so graphically described in the above extracts? I will give a few extracts from Judd's "Volcanoes," and all my readers can solve the problem just as well as myself.

'Before the outburst numerous light, curling wreaths of vapour were seen ascending from the sides and bottom of the crater. Suddenly a sound was heard, a sound as when a locomotive blows off its steam; a great volume of watery vapour was thrown violently into the atmosphere and with it there were hurled upwards a number of dark fragments which rose 400 or 500 feet above the crater, describing curves in their course falling back upon the mountain. Most of these fragments tumbled into the crater with a loud rattling noise, but some fell outside the crater and a few rolled down the steep slope of the Sciarra into the sea, some of the falling fragments were still in a semi-molten condition.'

This was why bounds were set unto the people and they were not to go up the mount or touch the border of it on pain of being *stoned or shot through*. That is the first stage, and then the thick cloud and the thunders and lightnings. Now to Judd.

'The uprushing current of steam and rock-fragments forms a vertical column. . . .

Around this column of vapour, the most vivid lightning constantly plays. The restoration of electrical stability between this column and the surrounding air is attended with the production of frequent lightning-flashes and thunder-claps, the sound of the latter being usually, however, drowned in *the still louder roar* of the uprushing steam column. . . Although this roaring sound appeared at a distance to be continuous, yet those upon the mountain could perceive that it was produced by detonations or explosions rapidly following each other.'

This latter is the trumpet, and when the trumpet sounds long and loud and the steam-column has lifted the Lord to the top of the mount, it is safe to go up, as there is no more stone-throwing. But the Lord might break forth upon the people, the fiery lava-floods might overwhelm them and so Moses and Aaron alone went up. The Lord spoke to Moses from ' Heaven, ' which is thus the top of the mount. The vertical column of vapour glows with the reflected light of the Lord below and hence is a pillar of fire by night and a pillar of cloud by day, revealing by that banner His subterranean movements to Moses and his comrades. The Lord is therefore *lava*. And verily the lava, plutonic and volcanic, laid the foundations of the earth, produced the earth, and is the source of all its wealth and energies. The earth on which we live is the body of the Lord, lava old or young, and the

Lord is our Father in the mountain-tops who comes down to the earth and invigorates it. It is only lava that could part the waters of the sea, make dry land appear, move on and let the parted sea close again. He could stay the waters of the Jordan, make it go back or go aside, dry it up—in fact do just as he pleased with it. He is the living Lord that inspired the Jews, and I have no doubt it is basaltic lava that helped the Jews. It alone possesses the mobility and energy required to raise a Graham's Island within the short period postulated by the Bible, and for the benefit of those unacquainted with Geology I will give an account of the origin and destruction of Graham's Island. I quote from Bonney's "Volcanoes."

'On July 10, a column of water 800 yards in circumference was seen spouting up from the sea to a height of 60 feet which was replaced by dense clouds of steam which rose 1,800 feet above the sea. By July 18, a small island appeared a dozen feet above the water with a central crater ejecting scoria, much of it floating on water. Till early in August it grew and reached its maximum size of 3 miles in circumference and above 200 feet in height. The new island began to disappear rapidly before the waves. On September 3, when it was carefully examined, it had become reduced to $\frac{3}{5}$ mile circumference and 107 feet in greatest height. By the end of October it was almost gone.'

This was in the Mediterranean, but across the shallow Red Sea and with basalt as the agent, the Biblical account of the providential escape of the Jews is rendered trustworthy. By the 'blast of the Lord's nostrils,' this work was done. If Pi-hahiroth and Elim of the Bible have been identified, I feel sure basalt would be found near about and Sinai itself is probably a basaltic volcano. Of course, Mount Sinai quaked greatly as eruptions are preceded by and attended with earthquakes. When Moses went to Mount Sinai a second time, the sight of the glory of the Lord was like devouring fire in the eyes of the children of Israel, and Moses communed with the Lord forty days and forty nights. The Lord, like Indra, was a man of war. He set up and pulled down the nations. He worked marvels for the Jews though on a smaller scale than Indra. Vāmadēva sang of the glory of Indra:—

'When your fumes of anger and your rotatory columns (of lava) shoot up, that is in you and that is in the sun.'

I will now take up Indra and Ahi. In volcanic eruptions we have a sufficient cause for the destruction of the glaciers and the rather sudden cessation of the glacial period, which is a puzzle to modern Geology. The Rishis saw this fearful agent at work on the ice, faced it manfully, survived the great war of lava and glacier and recorded their experiences of it in the immortal Riks for the benefit of their children, who treat them with

contempt. Before detailing the characteristics of Indra I wish to impress on my readers that the lava coming down from the mountains was a beneficent saviour in the highest sense of the word to all life on earth threatened with extinction by the dread agent of darkness and death. It must be remembered that lava rapidly disintegrates, and during the mighty and long-continued rush of the melted waters most of the lava-flows must have been washed away and mixed up indistinguishably with the rock-sediment that constitutes the great alluvial plains. As the Yajus puts it, the energy of Indra spent in fighting Vritra passed into the waters and the vegetable world. During the progress of the war of lava and ice, the plains were vast swamps, and in the valleys Indra was food and drink to the human race. The snow-streams he loosened, the springs and tanks he raised up and warmed from below, and the ashes and fertilising mud he supplied, these were the stay of life. As the poet boldy says:—

'Srayanta iva Sūryām Visvēdindrasya bhakshata.' 'As though you break up the sun (conceived as a cake) all of you eat of Indra.' The reader will do well to digest the following passages from Judd:—

'Tufas' scoria and lavas usually crumble down to form a very rich soil and many of the choicest wines are produced from grapes grown in the fertile slopes of volcanic mountains. . . . The island of Java is situated near the

very heart of what is at the present day the most active volcanic centre on the face of the globe; yet vegetable and animal life flourish luxuriantly there and the island is one of the richest and most fertile spots on the face of the globe. Not all the terrors of occasional volcanic outbursts will ever drive the Neapolitan vine-dressers from the fertile slopes of Vesuvius.'

The volcano not only fights the dragon and destroys it, its lava-flows not only furnish fertilisers (the Vāja of the Riks) but it covers the face of the earth with a new coat. Indra filled the Dyāvā (mountains), filled Rōdasi (the passes), filled the Priṭhivī, and his fiery floods flowed beyond. He broke down hills as though they were new pots.

'Bibhēda girim navaṁ inna kumbham.'

In lieu of the old beds buried under the detritus of Vritra, he made new channels for the rivers, and the rivers cut out new beds for themselves in his body and Bharadvāja says:—

'Adyāchinnūchid tadapō nadīnām yadābhyō aradō gātum Indra.'

(To-day and to this moment subsist the carved beds of the rivers which you cut out for them.) Ritam in the Riks is life, Satya is solidity, and Dharma is support. Satyadharmā, specially applied to Varuna, is one who affords solid support. Adharma is the absence of support which gives rise to earthquakes. The rivers are Ritāvaris, carriers of life, and Vājinis, carriers of fertile silt. When

a glacier is destroyed, the sun is literally restored to the bosom of the earth. When Indra destroyed Vritra he restored to us, the children of the valleys, the sight, light and heat of the sun. *He created the sun for us.* To us in the plains, this way of looking at things is difficult. But take the case of the dwellers in the dark valleys of Dharma and Byans in the north-eastern corner of British Gharwal. In the first volume of the "Imperial Gazetteer of India," we find the following:—

'With a climate and vegetation ranging between arctic and tropical, the conditions of life within the valleys overshadowed by the gigantic peaks of the Himālayas are infinitely varied. Even the accidents of position in relation to the sun's rays are recognised by the natives as requiring special terms to denote them, so obvious is their influence in moulding human form and character. Within the limits of a valley (where there may, however, be space enough to accommodate the whole Alpine System), there will often be found varieties of human type which might almost indicate divergency of origin.'

If in Dharma and Byans our beneficent Government were to arrange for the destruction of the stupendous mountain-walls, and give the human dwellers in 'hell' an extra hour of the sun, they would be certainly celebrated for ages to come as the *creators of the sun.* So Indra created the sun for us in a double sense, by melting, rooting out, and

breaking up Vritra and by breaking down the mountain-walls. When he melts Vritra it is Vritra-Tūrya or Ap-Tūrya (the hastening of the waters), and he is Vritra-Tura; when he breaks up Vritra by his explosive lava and bombs, he is Vritraghna. When the dawn concealed her lover, the sun, and was gaily driving along the southern side of the great mountain-wall of the Vivasva parvatas without condescending to look over, Indra broke the car of the lofty lady, and from far the dawn glissaded down to us abandoning in fear her smashed-up wain. As Indra broke down range after range, 'dinē dinē suryō darsatō bhūt' day by day the sun became more and more visible. The destruction of Vritra, the production of the sun, the release of the waters, and the restoration of the daylight are clear enough. When Indra was born, the heavens and earth, the firm-fixed massifs, all trembled, and massifs swayed, rocked and sank like temporary kitchens, their foundations remaining intact.

'Ni parvatā admasadō na sēduh,
Ni parvatas sādya prayuchchan.'

Then the child made a feeding bottle (cone) for himself to take in his first draughts of Soma. This cone he wove out of his own body by fighting (other cones) and then he rose, placing the heaven on his head. He first found it very difficult to issue out at the top of the cone and threatened to issue out of the sides of his mother (the old crater corresponding to the Somma of the Vesuvius). He was

told he should issue out at the top like all the gods, and when he saw his mother about to collapse he took in copious draughts of Soma manufactured in the home of Twashṭar and then issued forth in full might and majesty. Then he performed his first mighty deed: "to the top of this great cone he raised himself by Brahman, stood out on his car and scattered ashes far in quick succession in all directions." Mandala II, Hymn 17, Verse 3. He flowed in fiery floods drawn by Haris (horses or monkeys), broke down the firmest things, filled the passes and valleys, and both the transverse valleys below the great pass could only hold a part of Indra's body.

'Ardham idasya prati Rōdasī ubhē.'

With his friends, the Navagvas and Daṣagvas, he created the waters, the sun, and the cows. It is unnecessary to give further proofs of the identity of Indra with a volcano. And if I recite all Indra's deeds, the many glaciers he destroyed, the many black moraines and erratics he shattered to let in the dawn and sun, the daylight (Svah) and the wider horizons, he thus created for those immured in dark gorges, the wealth of soil (Vāja) he supplied, the precious stones (Ratna) and metallic ores (Dravina) he scattered in profusion, the copious springs he raised up, the bridges he made across rivers, the warm streams he loosened out of his own body, and by melting the Maruts and Dānus, the multitudinous beneficence of this mighty multiform (Pururūpa),

Maghavā (largess-giver), of many manœuvres (māya), and manifold activity (Ṣata Kratu), I could fill a whole volume, but I have neither time nor health to detail fully the works of this great Saviour of the human race whom Viṣwakarman created with such a store of aliment that he ensured his immortality and indestructibility.

'Viṣwakarman havishā vardhanēna trātāram Indram akrinōravadhyam.'

What is this aliment which made Indra the most powerful of volcanoes? This question I answer in the next chapter.

CHAPTER V.

INDRA AND SŌMA.

It is practically impossible to give a full translation of even a single hymn to Indra, or even a few connected verses of a hymn, without a knowledge of his horses (Haris), the Brahman that yokes his horses and that enabled him, to begin with, to force up his energy to the top of his cone, ('Yad asyāgrē brahmaṇā śushmam airayah') and above all, of Sōma. Viṣvāmitra is called Jaritar (rotter) and Kāru by the rivers. The Rishis designate themselves as such. Their chief work is to produce Sōma and fill Indra with Riks, Gīh, Stōmas, and Ukthas. Indra is a Gīrvāna, winner, absorber of Gīh. What is Twashṭar's Sōma? Twashṭar's sons are Viṣvarūpa, Angirāh, represented by Brihaspati or Brahmaṇaspati, and Aṭharvā. With Trita Āptya, another Sōma-maker, Indra destroyed Twashṭar's first son Viṣvarūpa. Sōma is stored in Adris, and is concealed by Paṇis which are niggardly in parting with it. Sōma is the father (Pitri) of the Rishis.

'Yūyam hi sōma pitarō mamasṭhana.'

Sōma is a fertiliser. Sōma shoots up to the sky. The flying falcon brings up Sōma between his feet. The falcon (Syēna) was

imprisoned in a hundred ferruginous castles and then he flew up when Indra forced him out.

'Ṣatam māpura āyasīr arakshan adha
Ṣyēnō Javasā niraḍīyam.'

Sōma must be purified of dregs and effervesce and then Indra rejoices mightily when he drinks.

'Na Sōma Indram asutō mamāda nābrahmāno maghavānam Sutāsah.'

Vipras, Brāhmaṇas, are Sōma purified by Agni's filter.

Yattē pavitram archivat agnē tēna punīhi nah. Brahma Savaih Punīhi nah.'

They pray to Indra and Agni to absorb them, and they attract Indra, strengthen him, and lead him. There is rivalry between the various Rishis as to whose Sōma Indra would prefer. Sōma produces the well-feathered Gāyatri, Trishṭup and Jagati. These are the children of Suparṇā. If Sōma is not supplied, Indra is powerless or paroxysmal. Sōma is, the food of the gods, and by offering it and filling the gods with its products the skilful Brāhmans controlled the gods. Sōma is, according to the children of Kaṣyapa, the moon, the expressed juice of the *Sarcostemma viminalis* or any other learned plant; in fact, anything but what it is. What then is Sōma? In one of the hymns of the tenth mandala, when the gods had established peace on earth, agriculture became possible and the marriage ceremonial was instituted, the Rishi sneeringly says, 'They crush a plant and imagine they have drunk Sōma. The Sōma that Brahmans know, nobody eats of it.'

Who is this omniform Sōma which flies like a bird, *rises and floats in the waters*, shoots up unprompted in great fountains (achōdasō nō dhanvantwindavah) flows in great rivers, forms great lakes and forms solid accumulations in hills? It is Sōma that arms Indra with Vajra (explosive power). Out of the very bones of Dadhyach, the son of Aṭharvā, Indra destroyed 99 Vritras. Sōma too is the Prince of Medicines. What is this Sōma? I will answer in the language of the Frenchmen Neuburyer and Noalhat (translated by J. G. McIntosh) in their exhaustive treatise on the technology of petroleum. 'What is petroleum? Ah well, petroleum is a thousand different things, a Proteus under a hundred different aspects.' Sōma is, therefore, Bitumen; and now I hope I will not take away the breath of my reader when I state in barest fashion the technology of the Rishis.

Jaritās	...	Decaying organic matter, chiefly peat-moss.
Kāru	...	A manufacturer of petroleum.
Manas	...	Cavities forming in decaying organic matter.
Manma	...	Interstices filled with gas.
Mati	...	Vent.
Manīshi	...	Vipra issuing in gas out of a vent.
Rik	...	Tiny bubbles of hydro-carbon gas flashing from the surface of decaying matter.
Gīh	...	Bubbles of such gas.
Stōma	...	Steady sing-song issues of the gas.
Gāyatri	...	Marsh-gas (CH_4).
Trishtup	...	Acetylene (C_2H_2).
Jagati	...	Ethylene (C_2H_4).

These three latter are the only sons of a well-winged mother, being the only hydro-carbons lighter than air. Of these Gāyatri is obviously, as the Rishis have it, the best-winged. They gave eight aksharas (letters) to the Gāyatri, eleven to the Trishṭup and twelve to the Jagati. By letters they may mean units of weight, though I have not made out for certain that they knew hydrogen, though it is possible they meant hydrogen by 'Narā-Ṣamsa.' Further, though the letters of Gayatri correspond to the molecular weight of marsh-gas, the molecular weights of acetylene and ethylene are 13 and 14, not 11 and 12, though possibly the admixture of Gayatri and hydrogen is responsible for the Rishi's error. I have not a clear conception of the Stōmas corresponding to the Chchandas, but Sāman (literally, strengthened or pressed) certainly represents the higher series of the Chchandas. Thus Rathāntara Sāman corresponds to the Gāyatri, according to the Rishis, and is literally motor-car spirit of the gasoline series. Similarly, Brihat Sāman derived from Trishṭup is clearly the benzine series and Virūpa Sāman corresponding to the Jagati is the olefine series. Explosive mixtures of the Sāmans with air or steam is Ukṭha. Long ago the Rishis declared "Brihat Sāma Kshatra-bhrit," 'it is benzine that upholds royalty' as other explosives do to-day. In the Ugra Manyu hymns of the tenth mandala they had discovered the means of utilising these explosives to break up and destroy erratic

robbers (Dasyus) who rolled down upon their fields and rendered them waste. It is probable the explosive was utilised in an offensive weapon called 'apvā' and Ugramanyu is Vajra (explosive) and acquires more energy when struck. No wonder Zarathūshtra cursed the Dēva-worshippers and made the Saviour Vritraghna a devil when the eastern Āryas under Indra-agni armed Indra with Ugramanyu and made him paroxysmal. With the Rathāntara Sāman, Vasishṭha led a mighty current of Indra's lava over precipices and through cols when Viṣvāmitra was powerless to do so with his Virūpa Sāman, though helped by his nephew Jamadagni with his Virāja Sāman, which is probably the naphthalene series. For Nītha (leading over obstacles), Rathāntara Sāman (motor-car spirit) was most powerful and for arming Indra with Vajra (explosive power), Brihat Sāman was best. The gods are sometimes Ukṭha Vāhasa, travelling by explosive motors. Vasishṭha, who was richest in Rathāntara Sāman, constituted a great reservoir of distilled petroleum rich in gasoline, and says at the end of his great Rathāntara Sāman hymn :—

'Tvayā vayam pravatah Ṣaṣvatīr apō ati Ṣūra tarāmasi.'

(With you, O brave Indra! we cross over the eternal snows of the precipices) and the greatness of Vasishṭha and his branches is described by Sudas, their king-cone, as below :—

'Their splendours are like the light of a

moving sun, their mighty mass is like the deep sea, and, O Vaṣishṭhas! nobody can follow the enormous wind-like rapidity of your praises.' The more the Riks Indra absorbs, the more the bubbles that pass into him, the more the praises that are blown into him, the more intimately the Rishi unites with him, the more his stomach is filled with Sōma, and makes his 'kukshi' (stomach) swell like the sea, the greater is Indra's delight and power and the mightier are the works he accomplishes for mankind. And then when he accomplishes his work and his intoxication subsides (raṇa-āvyē) and he crumbles down, then too the old Rishis as well as Bharadvāja found he was 'good.' He broke down into the richest of soils of which all ate as though they had broken down the sun himself. Sōma, the summation of the hydro-carbon gases, vesiculates Indra, renders him far more powerful for explosive and journeying work than mere steam, and what is more, fertilises him, while with steam alone Indra frequently spreads wolves (vrika tāti) from which the Rishis pray to be protected. The frightful bristling Scoria which tear and lacerate the skin are appropriately termed wolves (Vrika) and Vāyu is steam. Consistently with other errors, the children of Kaṣyapa have confounded the steam which issues from volcanoes (by the contact of sinking waters with the living Lord) with vāta, the wind. Even in the later hymns of the tenth mandala the imitators of the old Rishis began to

confound Vāta and Vāyu as they began to confound Sōma with the juice of a plant. Vāyu is the breath of the gods. In the great Hiraṇyagarbha hymn is the following verse:—

"When the great waters held Agni in their womb and gave birth to him (*i.e.*, when the gods saw the light of day), then issued forth the great 'asu' (breath) of the gods."

Hence volcanic gods are Asuras and ordinary steam is svadhā. It surprised me when Ahūr Mazda was not interpreted as the 'great' (mahat) asura, a name applied to Varuna in the Riks jointly with his good brother Mitra.

Mahāntāvasuraū Ritāvridhaū.

(The great asuras who increase life.) Angra Manyu is, of course, Ugra Manyu. The water which is held absorbed in underground lava is Tanūnapāt. When it flashes as steam or a mixture of oxygen and hydrogen it is Narāṣamṣa, when it carves in the mother it is Mātariṣva, and when it issues out, it mixes with the air or creates currents of wind. This distinction is brought out by Viṣvāmitra. Indra is, of course, supplied with steam power by the Maruts, and in the quarrel between him and the Maruts, Agastya makes the Maruts say: 'You certainly followed our Svadhā, O Indra.' This Vāyu, the breath of the gods, is Twashṭar's son-in-law. Who is this Twashṭar who had Vāyu for his son-in-law? What is his Sōma which first raised up Indra? What is the 'Brahman' of which he is made? Twashṭar is the parent of the gods and made special

store houses of his Sōma in the Brāhmans Viṣvarūpa, Aṭharvā and Brahmaṇaspati. His daughters are Janis (literally breeding-woman as opposed to Starī, a sterile woman). These Janis he gives unto Vāyu for wife and Vāyu produces sons and daughters known as Naras and Gnās and the gods are produced by the self-hollowing of the Naras. I will give the interpretation at once. Twashṭar or fissurer, Hephaestus and Vulcan is the mass of elastic gases accumulating in subterraneous cavities over the great reservoirs of lava. These gases are known as Brahman or the 'expanders.' This Twashṭar fissures from below and the great primary fissures, his daughters, are the Janis, mothers of the gods. When these fissures are made, the waters go in into the lava, and Mātariṣvan or Vāyu operating on the Janis produces hot springs (Gnās) and fumaroles (Naras). These fumaroles rear themselves up into hollow cones. The elastic gases are mostly hydro-carbons and are identical with the substance of Sōma and the vapours produced by its distillation. Great accumulations of bitumen solid, liquid and gaseous, are produced in the region of the primary fissures. There is every probability that before the access of waters the fissuring gas was hydrogen and that it is to this that the word Param Brahma was first applied. Purusha (lava) is described as Rita, Satya and Param Brahma, meaning he is liquid, solid and gaseous. Hydrogen is the Brahman (expansive gas) *par excellence*,

and hydrogen absorbed in lavas under stupendous pressure was probably responsible for the great lines of primary fissures with which Purusha encircled the globe (Bhūmi)—the fissures out of which he rose with many heads, many eyes and many feet ten finger-breadths above the level of the Bhūmi. This, if the maximum height of a volcano were taken at five miles, would give forty-five miles distance for the boundary line where the crust of the earth and the central, deep-seated reservoir of lava come into contact, ninety finger-breadths of the rising Purusha being underground and ten above the earth. Twashṭar's Sōma is thus Sōma formed by the contact of water with lava and the probabilities are, this naphtha was formed by the condensation of Gayatri and Trishṭup (CH_4 and C_2H_2) produced by the action of water on metallic carbides chiefly carbides of calcium and iron. Of course, if Twashṭar cut his fissures in sedimentary beds of coal or fish, these alone by destructive distillation under the combined influence of steam and lava would yield all forms of bitumen. Thus Atharvā is vapourising naphtha; Dadhyach, his son, is viscous lubricating oil, produced by naphtha coming in contact with air; and Pāthya, the son of Dadhyath, is pitch or asphalt, being, as its name implies, useful for paving roads. Vāstōshpati (lord of house) Indu is pitch, which keeps out cold and keeps the house firm. I will repeat that Atharvā of Brihaddiva, Angirāh chiefly as Brihaspati, and

Viṣvarūpa were the three Sōma children of Twashṭar. What is the Sōma stored in Adris and guarded by Panis? Adri is an absorbent rock ('ad,' to eat). It is a reservoir rock of porous conglomerate, sandstone, or limestone chiefly in the form of dolomite; Pani means impermeable shale, the cover-rock. There is good reason to believe that the Vala who retained the cows (Sōma) guarded by Panis was dolomitic limestone and Trita Aptya was a pure naphtha distilled up to the crystalline peaks in nummulitic beds of Eocene age, elevated to the very tops of the mountains. He is not only in the highest peaks (divi-rōchanēshu) but he falls and is engulfed in darkness.

He is the seat of 'Dusvapna,' bad sleep, which I have no doubt represents carbonic acid gas. The Rishi prays that all carbonic acid may be absorbed by Trita Aptya whose body contains it. Next we come to Saramā, the messenger of Indra, who preceded him in the underground search for Sōma. Of course Saramā is hot water charged with sulphurous acid. Her children are the dogs, Ṣwāna being sulphur. Saramā having worn out the panis (shale) and exposed the great stores of petroleum, the Āngirasas break up the rock with words (explosions) and the cows joyously issue from their stalls (anticlines) and mix with Twashṭar's children who accompany Indra in the quest. Having helped Indra and the Āngirasas to discover petroleum, Saramā found plenty of beds to lay her children on,

'Vidat Saramā tanayāya dhāsim.' Hermes is, therefore, sulphurous acid, the arch-thief and messenger who can break into the best-guarded places and conceals metallic wealth in out-of-the way places as sulphides. The Bhrigus are also Sōma-producers. The Bhrigus are coal, probably lignite as they are in the middle (Forest) region and they produce Sōma by contact with lava. If you wish to understand the Sōma Pavamāna hymns properly, you must not only read a full description of the oil-fountains of Baku and of the oil and gas bubbling through the Caspian Sea and covering whole square miles with sheets of flame, but you must also imagine what the Rishis saw, the Sōma filtering through oilsands (avyō vāra) in the high ranges, rising through the snows (Gō), sprayed and purified by fumaroles lining the slopes of volcanoes, and entering as 'Havis' great hollows in the mighty bosom of Indra and Varuna. Jaritās (decayers) are, as I remarked, decaying organic matter and mostly peat-moss which is *highly bituminous*. Vāyu is the vapour column which shoots out of a volcano and it reaches Sōma before the gods (lava) or passes underground producing fumaroles ('niyuts' literally 'hollowing within') on its line of march. Vāyu frequently leaves Indra behind, and then it is Sōma that keeps them together and helps and persuades Vāyu to lift him and carry him.

'Tritasya nama janayan madhu priyam Indrasya Vayōssakkhyāya kartavē.'

(Sōma produces Trita to make Indra and Vāyu friendly.) The Haris that carry Indra in his sub-aërial car when he flows as a lava stream from his crater vent is Vāyu or steam currents. It is Brahman (hydro-carbon gas) that yokes the unwilling horses to Indra's car. The steam of the Maruts form additional relays in his royal progress and these great stores of motor power and fertilising power enable him to conquer all obstacles, reach enormous distances, produce numberless children in his own image and yet retain immortality. Viṣwakarman by supplying him with great stores of Havis (distilled Sōma) rendered him indestructible, and Purusha commands immortality if he rises with stores of food.

'Utāmritatvasyēṣānah Yadannēnātirōhati.'

I have now explained, though very briefly, the nature of Indra, his horses, his food and drink, and the mighty works he accomplished with their help. During his normal Strombolian activity two steam-columns in two side-vents dragged his car and they frequently stood still, when Indra rose up. He is then 'sthātar' identical with Jupiter Stator. The Rishis from various valleys roused him by Sāmans and Stōmas (hydro-carbon vapours), gave him Sōma, and Sōma dregs (astatki) to his horses and led him wherever they liked. As I have already remarked, the Rig Vēda has benefited Geology by furnishing the accounts of eye-witnesses as to how the glacial period

was ended. For the good of the present generation of their children the Rishis have taught the simple lesson which they practised on a large scale, that volcanoes can be partially controlled by petroleum. The lava follows petroleum like a hungry horse. During the wars of the earth-born heroes, the great gods were controlled and led and utilised by supplying petroleum and hydro-carbon vapours.

'Dūrādindram anayannāsutēna tirō vaiṣantam atipāntam ugram Pāṣadyumnasya Vāyatasya Sōmāt, Sutādindrō avriṇītā Vasishṭhān.'

They (the Vasishṭhās) led Indra from afar, Indra the straight-tunneler, the great drinker, the fierce. Indra preferred the Vasishṭhas to the Sōma pressed by Pāṣadyumna Vāyata. This is the real meaning of Jupiter, and Poseidon (originally Ouranos) being enslaved by mortals. Indra was for a long time enslaved by Kutsa and his wife and the Rishi says :—

'I have heard you were master of your own movements ; come away here from Kutsa ; a great man like you should not sit idle, tied to a woman.' Vāmadēva was so impudent as to offer to sell Indra's services for ten cows. He says :—

'Who will buy this my Indra from me for ten cows ? When he has broken up all your glaciers you must give him back to me.' (Mandala IV, Hymn 24, Verse 110.)

A line of gasoline (Vasishṭha) and benzine

(Bharadwāja) reservoirs commencing from the active vents of Vesuvius or Etna, laid along the desired direction with a gas-pipe inserted into the vent to determine the initial movement, will enable us to lead the lava like an animal and break up the lava into the richest of soils, far richer than what modern lava now produces. The great inky column of steam, dust and gases (Vāyu) shooting up double, treble and quadruple the height of the highest mountains on the globe and overwhelming earth and air with darkness, dust and floods cannot be controlled, and Agastya, who could do pretty much as he liked with the gods, fervently prayed to heaven and earth to be saved from the 'abhva,'

'Dyāvā rakshatam Priṭhivī no abhvāt.'

I will now proceed to consider in the next chapter the greater and the lesser gods, and the earth-born heroes produced by Twashṭar's dividing the heaven and earth.

CHAPTER VI.

TWASHṬAR, THE ĀDITYAS, RUDRAS AND VASUS.

THE reader already knows Twashṭar, who fissures the earth and heaven, who produces mineral petroleum and hydro-carbons, and arms Indra with explosive Vajra made up chiefly of Brihat Sāman. It is not necessary to say that this Twashṭar is Vulcan who forges thunderbolts for Jove from under the entrails of Etna. Twashṭar's first effort in Aditi produced the Sādhya Dēvas who did not see the light of day. These lavas did not rise above the surface. Their position is in all probability the parting line between the slaty crystallines and the slaty coherents of the great mountain range, to use the simple and intelligible technology invented by Ruskin for ordinary men. This is the 'divō nāka,' where the heaven joins the antariksha and this line of weakness, strengthened by dykes and forming the junction between the heaven and middle region, is the seat of Gandharvas, which are salses in which petroleum predominates. The origin of these Gandharvas is Vēṇa, and this Vēṇa produces the ox in the hills which is probably Ozokerit.

'Divō nākē madhu jihvā āsaṣchatō Vēṇā duhantyukshaṇam girisṭhām.'

(At the junction of Dyāva, sweet-tongued Vēṇas milk out the ox in the hills.) One form of Sōma is expressly declared to be produced by the action of steam on Vēṇa.

'Vēṇād ēkam Svadhayā niratakshan.'

In hymn 123 of the tenth mandala is a full description of Vēṇa, in which his position is the highest rajas (region between forest belt and permanent snow-line) and how along the lines of rest of the rajas (rajas vimānē) he rises enveloped in splendour, rousing the children of Prisni when the sun meets the waters, and how armed with his (Vēṇa's) weapons the Gandharva rose above the nāka and a banner of white steam displayed beauteous forms in the third rajas. These Gandharvas were older than the gods and one of these mighty Gandharvas which had never been stretched low was destroyed by Indra. When the Ṣyēna brings Sōma for Indra, the Gandharva who shoots high, as salses naturally do, attacked it and reduced its flying power probably by currents of sulphur di-oxide. This Veṇa then must issue from the Sādhya Dēvas stored up in the lowest hollow (Paramē Vyōman). 'Vyōman' means break, fissure, being literally absence of protection (ūma). The gods are 'Ômas,' protectors. Vēṇa is, therefore, hydro-carbon gas issuing from underground lava which fissured the crust, but did not reach the surface. This was the great reservoir out of which the other Agnis were made. 'Vēṇa' means desire, love, and is

identical with Kāma, the son of Vishnu, and the Yajus has it:—

'Vēṇas tad vēda paramam guha yad yatra viṣvam bhavatyēka rūpam.'

Vēṇa knows what is in the deepest of depths where the universe merges in a single form. He is the child of Vishnu and is the primeval source of life and intelligence and the probabilities are that the Apsaras (wingless nymphs), who hold him in the lowest cavity, raise him to their balconies, *i.e.*, tops, of anticlinals (harmya) and cajole him to remain with them for ever, are brine springs. Venus and Aphrodite born of the ocean foam is, of course, Vēṇa, though the Greek conception is not carefully thought out. In the last verse of the 'Purusha Sūkta' hymn, the place where the Sādhyas of old dwelt, is declared to be Nāka. The oldest of the volcanic gods, the Adityās, were produced by Aditi desirous of progeny offering Brahmōdanam (food rich in Brahman) to the Sādhya Dēvas. Then a mighty fissure was opened in the Brihaddiva and the modified lava was 'Savitar' who produced Aryaman, Mitra, Varuṇa, and Indra. These great volcanoes were produced in the granite of the central range right at the crest. They were produced in the order I have given, from west to east. For when Purusha overflowed he did so first in the 'paṣchād bhūmi' and then in the 'purō bhūmi.' Aryaman became moribund first, but was a great store-house of lubricating oil and warm springs and was as such

regarded as the guardian of unmarried eligible girls fit for rearing cones upon. Mitra and Varuṇa, a twin volcano, rose higher than all others, and Varuṇa was the highest of all. His high top, (Vayaṣcha nāmi patayanta āpuh) even the flying birds did not reach. So 'Vishnu's highest station is not reached by vayascha na patayantah patatriṇah,' 'the winged birds that fly.' Mark the word *patayat* for flight. It is *upward* flight and literally means 'making oneself fall' and implies raising oneself to a height, falling by gravity, in fact progressing by series of rises and falls, the rise being due to the energy of the bird and the fall to gravity. That was how the gods were produced. How did Savitar produce the great Ādityas? Vāmadēva's immortal verse (Mandala IV, Hymn 54, Verse 5), to which I have already referred, runs as follows:—

'Out of the great massifs (Brihat parvatas) you create the gods of whom Indra is greatest, and for these you create homes over fissures. As they flew up and settled apart they stood helpfully to promote your creation.'

Pastyā is a fissure. Pūshan (midday sun) is Vāja pastyā, the god of fertile fissures. Varuṇa sat down for universal dominion over Pastyās. Varuna made his platform over most motherly fissures.

'Nishasāda dhritavratō Varuṇah pastyasvā Sāmārājyāya Sūkratuh.' (Ṣunaṣṣēpa.)

'Pāstyāsu chakrē Varuṇassadhastham Apām Ṣiṣur Mātritamāsvantah.'

(Ṣukla Yajus.)

The former is the verse used when a new king is established on the throne. The formation and rise of a cone is exactly similar to the process by which birds elevate themselves. Hence Agni is a bird (Yahva, Jehovah) in a double sense, as he is also the heater (Hōtā god) and (Yajata) melter. Of course, all these gods, as well as Sōma and Vāyu, are kavis (poets) because of their metamorphic action. They transform and produce new shapes, substances and wealth of all kinds. In another verse of the same immortal hymn the great seer tells Savitar:—

'On the Yagna-helping gods you bestow the highest form of immortality. Then you extend your rope (Dāma), bespeaking life to mortals.'

The rope is, of course, ropy lava. The order of succession of these great volcanoes, as already noted, is Aryaman, Mitra, Varuṇa and Indra from west to east. They decayed in that order till Varuṇa and Indra became the sole rivals and Indra finally established his greatness over Varuṇa too, with the help of Agni in the middle region and above all of mighty Vishnu. It is always Varuṇa, Mitra, Aryaman in speaking of these three gods together. Kaṇva says that Indra, Varuṇa, Mitra and Aryaman made homes in Brahmaṇaspati.

'Pranūnam Brahmaṇaspatir mantram vadatyukṭham.

Yasmin Indrō Varuṇō Mitrō Aryamā Dēvā ōkāmsi chakrirē.'

These are the four great ādityas proper, because Indra is called 'turiyāditya,' the fourth āditya. They were the eruptive volcanoes. Bhaga rose but he ever remained intrusive, flowed by subterranean pathways and brought down to the valleys great crystals from the deepest parts of Savitar. He was the wealth-giver *par excellence*, as he gave wealth in its most concentrated form, and he was immortalised as the god of wealth as he put into the 'pockets' of poor men in the low valleys as well as kings, untold, unexpected wealth. Ṣamsa or Naraṣamsa only steamed and sent forth currents of Vāyu in rising columns and by underground ways. Dhātā (holder) was the great reservoir of Savitar lava supplying these great gods. A great cross-fissure (pastyā) called Saraṇyū extended to the Vivasvān range, and out of the ropy Savitar lava which passed down and accumulated in Vivasvān, Manu and Yama were produced. The great Garla Mandhāta mountain below the Manassarōvar lake marks the position of Manu while there is every probability that Yama's engulfment took place at the south-western corner of the Rakas Tal Lake, Mount Kailas, probably representing the worn-out remnant of mighty Varuṇa. Yama's sister Yami, the great underground warm-water reservoir born with him of his mother Saraṇyū, rushed to embrace him in the central conduit round which he had thrown out his magnificent cone; he repelled her embraces, the

sister was passionate and persistent, and then Yama was blown off in a series of explosions and then commenced the series of engulfments which produced Nirriti (bottomless pit) where Yama reared his splendid head. Yama perished even as Bandaishan perished in Japan. It was the saddest event in the history of the old Rishis. Out of Savitar, partly through Manu and partly through Yama and partly through Manu's daughter Iḷa were produced men, and these flourished exceedingly on the fertile slopes of Yama, who was a king unto them, absorbing their Sōma offerings, supplying them crystal snow streams, splendid springs, magnificent soil, and all desirable things. Many of our ancestors perished and that is the event we celebrate in the 'Mahāḷaya Amāvasya,' the new-moon day of the great sinking. They tried to re-establish with Havis him (the son of Viṣvasvan) who sank far down to perdition, 'down precipitous slopes spying this way and that for help, even he the great Yama round whose mighty bosom were gathered the tribes of men.' Great was the lamentation, for Yama first established the ways of civilisation and the splendid pastures that belted his base afforded grazing grounds for innumerable herds of cattle.

'Yamō nō gātum prathamō vivēda naishā gavyūtir apabhartavāu.'

Even as the great mountain ranges are immortal as compared with the face of the valleys they vivify or overwhelm, the great

volcanoes born in the highest mountains are immortal as compared with volcanoes of the valleys. These latter are the 'martyas' (mortal and born of 'mrit' or tuff). Great martyas are the earth-born heroes, kings like Divōdāsa, Bharata, Āyu, Atithigva, Kutsa, and Suśravas. They are born of gods, the latter being secondary cones thrown on the slopes of the great gods. And the sons of God went unto the daughters of men and produced mighty heroes in the Priṭhivi. These are the Pārṭhivas. Those born in Diti are Daityas.

'Titanian or earth-born that warred on Jove' is 'Daitya or Pārṭhiva that warred on Indra.' Of course, Agni produces these heroes. Even the gods sought their friendship and respected their prowess. Out of Saraswati and the shattered cone of Vadhryaşwa Agni produced Divodās or Bharata. Vadhryaşwa's greatness is detailed in hymn 69 of the tenth mandala, while his origin is celebrated in a hymn to Saraswati.

'Iyam adadāt rabhasam Riṇachyutam Divōdāsam Vadhryaşvāya daşushē yā şaşvantam āchakhādāva Sampaṇim tā tō dātrāṇi tavishā Saraswati.'

'You gave, O Saraswati, to liberal Vadhryaşva a debt-discharging forceful son Divōdāsa, you who constantly wear out the Pani (shale) and produce splendid gifts (of Sōma).'

Why are the gods immortal and the earth-born mortal? The gods are seated high

above clouds and storms, where there is eternal day during the day. The snows that envelop them as a splendid jewelled robe afford them a regular supply of steam power. Prişni's lovely children but thicken their coat, and snowstorms do not injure them. Raised high on granite platforms, they are practically beyond the reach of lower volcanoes. When their supply of Sōma is exhausted they cease to grow and erupt lava but continue to breathe like splendid high-born kings calmly watching the progress of mankind. An earth-born hero is essentially earthy, he is liable to be attacked by storms, he is easily washed out, he gets into paroxysms and blows himself off. The gods of the Andes who rose out of the crest of the Cordillera and outtop the crystalline peaks, still rest in peace.

Many of them still breathe and Cotopaxi still erupts occasionally. But earth-born Vesuvius is very different. A martya is so well described by Sir Martin Conway that I will give an extract from his work on the Alps.

'From a climber's point of view, volcanic rocks seem very hard and very brittle. They fracture with an astonishingly sharp edge which cuts like a knife the fingers and clothes of the climber. Slopes of volcanic *débris* are very unstable. The foot sinks into them almost as into sand and they cut the boots and gaiters to pieces. To wade up such a slope is the worst kind of purgatory, provocative, too, of more sins of language than it can purge in the

time. The lower slopes of volcanoes are frequently most fertile, but higher up all that a volcano produces is toilsome for the foot of man. It follows that volcanoes are peaks of an unstable character. They are upstarts by nature and are easily pulled down. Among mountains they are the most short-lived. It yields willingly to decay. The *débris* of its upper rocks flow down its face almost like water. They grind together into dust and are blown away by the winds. Yet these mushroom monsters are not without their compensation. When active, they enjoy a magnificence of public advertisement that no other kind of peak can ever hope to rival. They grow in height or are blown to perdition amidst earthquakes and terrific thunders. The storm clouds enveloping snowy peaks are nothing to the smoke and darkness that wreath the brows of an erupting volcano. Blasts of fire shoot from them and for glaciers their sides are flooded with molten lava. Few of us can hope to see such sights in the fulness of their glory. When the mountain is full-grown and its days of activity are done, for a while, it reigns a figure of perfect grace, a very queen for elegance and beauty of form. Probably no snowy peaks in the world are more absolutely perfect in form than the white-clad giant volcanoes of Kamaschatka. The outline of the cone rising gently at the foot, then steepening in its incomparable logarithmic curve, is the gracefullest nature produces on a large scale.

Even the effulgent domes of the greatest cumulus clouds that soar into the clearest blue sky on a faultless summer afternoon are not to be compared with volcanoes at their best. They have the aspects of works of art made expressly to incorporate an idea of beauty. They possess the symmetry of a fine crystal, but a grace far beyond what is possible for any crystalline form. And then how they soar! How their beautiful heads seem almost to float in the blue!'

The robing and jewelling of a king find a close analogy in a volcano. Sir Martin Conway says:—

'In volcanic districts the colouring of the rocks is almost always remarkable. It seems as though nature had emptied her whole palette upon them. Other mountains depend for their colour on the atmosphere. These are independent of that source. Their own colour is predominant. All they ask for is transparent air and bright sunshine to display them. Their combination is so unusual, their chord so unlike anything we are accustomed to in ordinary surroundings, that they cannot fail to be the chief element in the view. They bring together, combine and contrast a whole series of unusual tints.'

If Sir Martin Conway could write thus of modern volcanoes (and other equally sober writers deify the imperial sovran, Mount Blanc), it is well for modern man and his sanity that Mitra and Varuṇa do not exist.

The Rishis who describe these mighty andesitic brothers who shone golden in the brightening dawn and blazed like burnished copper or molten iron at sunrise, who rose higher than any known volcanic mountain and looked down both on Aditi and Diti, who saw the birds flying *below* them, saw the ships on the sea, from whom the sun, moon and stars were never concealed, on whose beauty dawn lighted first, and even lingered longest, while all below was dark, who rose right out of the highest range in the greatest plateau (Thibet) of the earth, who had great aiguille spies to guard them from intruders and report all that men were doing in the valleys, the Rishis who describe Mitra and Varuṇa, especially the latter, will compare favourably for sobriety and accuracy with the sanest of moderns. The exquisite beauty of these hymns devoted to Varuṇa and Mitra-Varuṇa cannot be given in a translation, and I will not attempt it even on a small scale. The martya volcanoes are made up mostly of tuffs and fragmental materials while the great andesitic volcanoes are made up of lava-flows intercalated with beds of ashes and strengthened by dykes of lava, which latter frequently breach the martya cone. Varuṇa, and in a lesser degree Mitra, was the type of imperial sovereignty. Sublime he rose, high above all his peers. The splendour of his bejewelled robe was indescribable. Nothing escaped his searching eyes. Thrice a day he gave audience to his people in

the valleys below who came up with their prayers and offerings, and thrice he rose in his throne as regularly as the sun himself and scattered beneficence to his subjects below.

'Trirādivō Savitā sōshavīti rājānā mitrā Varuṇā Supāṇī.'

Golden-eyed, golden-handed and golden-armed, the Savitar lava rose thrice and sent down splendid snow-streams to the frozen valleys at the foot of his throne. An ostritch feather in the shape of a thin snow cloud (Prişni Gōpa) floated over his brilliant head-dress. His kingdom he created out of his own body. Its fertility, wealth and irrigation works were all due to him. Great warriors (secondary cones) born of his own body guarded him. He was the father of his people. No wonder Brahmans loved to chant the Varuṇa hymn when they established a king on a throne.

'Nishasāda dhrita vratō Varuṇah Past-yāswā Sāmrājya Sukratuh.'

Varuṇa was entitled to say, 'The State; I am the State.' Such a king who took in the Sōma of his organic subjects and returned it in thousand-fold beneficence was the emperor *par excellence* and was a Maghava of maghavas. Such a king was Yama too to the men who multiplied in him. The gods too had formidable enemies, but I will finish with Savitar before I deal with them. When Yama perished, the great fissure Saranyu closed up in Vivasvān, but widened *above*. This widened fissure

Twashṭar filled up for his daughter with 'vahatu' (bridal cake) and Agni as Vasu and Rudra produced the two Aṣvins. The Aṣvins separated the great lake of Aditi into two and are probably now represented by the hot springs found on the ridge separating the Mānassarōvar and Rakas Tal lakes. It is clear that the great fissure Saranyu over which andesitic lava passed into the Vivasvān range south of the lakes passed right under the separating ridge. When Agni passed down to the middle region, there was a change in his composition and he became Vasu giving rise to the Vasus. When he rose a third time in the crests and precipices he was Rudra. The Vasu-Agni who produced the Vasus above the banks of the longitudinal valley, and the Rudra-Agni who produced Rudras in the crests and precipices, have all a common source.

'Vayā id agnē agnayastvē anyē tvē Viṣvē amritā mādayantē.'

This Rudra and Rudras should not be confounded with mountain lightnings and snows. This Rudra-Agni is, of course, an asura (breather) in a special sense. His energy is chiefly the energy born of Vāyu and is intimately associated with lightnings and snowstorms as he rose amid great snowbeds and precipices. This Rudra was the Ṣiva of later mythology, who clothed himself in glacier serpents, had a snow-stream on his matted head of snows and ashes, which ever melted and was ever absorbed in his hoary locks. From

his position in gneiss and crystalline schists and the stupendous might of his snowstorms, and the floods and stone avalanches he created, he was the most dreaded form of Agni. When king Sōma would not rise up and had to be beaten up, the gods appeal to Varuṇa Āditya as their chief, but he was ever merciful and a forgiver of sins (riṣādā), and finally he leaves it to Rudra the 'Krūra' (cruel) to do the work. Rudra was a great 'Ghātuka,' destroyer, and the other gods selected him for the worst kind of work. It was out of this Rudra-Agni that the six-headed Kārtikēya was born, who rose in six cones, drank Sōma of six reservoirs of Sōma and water, the wives of six great Rishis (sweet water springs out of which petroleum and hydro-carbon gases issue), and rose in might and majesty after a day's draught of the invigorating juice to destroy the enemies of the gods. There is every reason to believe that Rudra-Agni is rhyolite and Vasu-Agni is trachyte, just as Savitar-Agni, synonymous with Āditya and Viṣvānara, is andesite *closely allied to basalt.* Vēdic scholars will, of course, know by this time that a volcanic cone is "Bhuvana."

'Divaspari prathamam jagnē Agnih, asmadvitīyam pari jāta vēdāh, Tritīyam apsu nrimaṇā adhatta.'

Agni was born first along the heaven, then round us and a third time in the (massed) snows. Kartikēya is rhyolite lava which developed into a six-headed volcano with the

help of Vasu-Agni below, and hence is known as Rudra's son as well as Agni's son. The work of Viṣvakarman is summarised in the very first verse of the hymn devoted to him. " He, our Father, transformer and heater, who sublimed all these volcanoes and sat within them, he desiring to produce wealth as a blessing " (to us his children) " entered inferior lower ones under cover of his first (cones)." Viṣvakarman created cones in the central range, then went underground raising up cones in the descending line of his march for the benefit of life. Viṣvakarman is our 'Janita,' creator, he is the volcanic god who fissured earth and heaven, produced the great gods to fight Vritra and his castles, and produced mortal kings (martyas) in the earth for the progress of life, fertility and wealth. He was the tectonic god and his energy passed into the waters and the world of life on the surface of the earth. The Riks justify the mythologies of the Greeks and the brave Maoris as to the parting of heaven and earth and the creation of the gods. The Rishis frequently discuss the question of the origin of heaven and earth, but they nowhere expressly state that Viṣvakarman, who in his Āditya, Rudra and Vasu forms rose in frail Bhuvanas, created the mountain ranges and the primary longitudinal valleys. That was the work of a higher than he—the mighty Vishṇu, of whom he was the overflow, and to whom the next chapter will be devoted.

CHAPTER VII.

VISHṆU.

VISHṆU is the source of all the gods. There is good reason to believe that he is the Lord of the Old Testament. He is the Apollo of the Greeks. He is basaltic lava. For brilliancy, energy and size, no god or host of gods can approach him. To us mortals of this reposeful period, he condescends to show himself on a small scale chiefly in two Vaikunṭhas, pit-shaped cauldrons in the Pacific island of Hawaii. I will first describe the living Lord from Dana's "Characteristics of Volcanoes." The craters are Mount Loa and Mount Kilauea.

'The south-west and northern parts of the crater were one vast flood of liquid fire in a state of terrific ebullition. Fifty-one craters of varied form and size rose like so many conical islands from the surface of the burning lake. Twenty-two constantly emitted columns of gray smoke or brilliant flame and many vomited from their ignited mouths streams of florid lava which rolled in blazing torrents down their black indented sides into the boiling mass below. In a night scene, the agitated mass of liquid lava like *a flood of metal* raged with tumultuous whirls. The red-hot lavas would dart upwards and boil with terrific grandeur. Close by stood

a chimney above 40 feet high which occasionally discharged its steam as if all the steam-engines of the world were concentrated in it.' (This is the Śankha of the Lord.) 'The flowing lava swept away forests in its course, at times parting and enclosing islets of earth and shrubbery, and at other times undermining and bearing along masses of rock and vegetation on its surface. It plunged into the sea with loud detonations. The burning lava on meeting the waters shivered like melted glass into millions of particles, which were thrown up in clouds that darkened the sky and fell like a storm of hail over the surrounding country. The light was visible for over a hundred miles at sea, and at the distance of *40 miles, fine print could be read at midnight.* The islets of forest trees in the midst of the lava were one to fifty acres in extent and the trees still stood and were sometimes living. The lava flowed round stumps of trees, and as the tree was gradually consumed, it left a cylindrical hole either empty or filled with charcoal. In a night scene, from the summit, the large cauldron in place of a bloody glare now glowed with intense brilliancy and the surface sparkled all over with shifting points of dazzling light like a network of lightning occasioned by the jets in constant play.'

'A grayish filmy crust of hardened lava covered it most of the time. But every four or five minutes the crust would grow thinner, split and rapidly parting, open to view a fiery

surface 10 to 15 feet across in which the lava after heaving up and down for a few seconds burst into a fountain of 20 to 30 feet and then falling back, the spot became quiet and the red surface quickly took on its gray filmy covering. The alternations from the crusted to the completely molten state took about three minutes.' (This is Vasishṭha's Ṣipivishta Vishṇu.) 'The wall of Halemaumau was tufted with Pele's hair which was perpetually being formed from the lava projected into the air.' (This is Vishṇu Hrishīkēṣa.) 'The lava of 1832 was much weathered and mostly under dense vegetation. Half-charred trunks of trees were standing in 1887 with a rough cylindrical encasement of lava about the stumps.' (Agni munching the trees with his teeth.) 'One typical cone of beehive shape, 12 feet high, about 40 feet deep within, and having walls 2 feet thick' (Vishṇu's Ṣankha or conch) 'was throwing up jets and clots of lava through holes in its sides with a deafening or rather stunning roar and subterranean rumblings and detonations. Where the lavas of the lake went is the old question again unanswered; perhaps into some cavernous subterranean region or perhaps into the sea by some opened fissure. Though a stick could be lighted by thrusting it down a crack, there was scarcely a place from which I was prevented access on account of the heat.' (Vishṇu is a kind and good-natured god, not a scorcher like other Agnis.) 'The lavas dashed up in spray and

splashed noisily, seemingly with the liquidity of water. Basalt or doleryte is the lava, and the heat is sufficient for the perfect mobility of the lavas and therefore for the fullest and freest action; though there is not the fusion of all its minor ingredients, of its chrysolite and magnetite. The temperature needed for this mobility is 2,000° to 2,500° F. We are certain a white heat exists within a few inches of the surface, for the play of jets in a lava-lake makes a dazzling network of fine lightning-like lines over the surface and white heat is equivalent to 2,400° F. Considering the height of Mount Loa and the greatness of its eruptions and the vastness of basaltic outflows over the globe, we may reasonably assume that the temperature needed for the normal basalt-volcano has long been and is now, easy of supply by the earth for any volcanic region. It cannot be affirmed that this higher heat required for the complete fusion of 'trachyte' (Indra) 'or rhyolite' (Rudra-Agni) 'is wanting at convenient depths below, for it has been manifested in the outpouring of vast floods of these lavas through opened fissures. The special eruptive characteristics of a basalt-volcano are first, greater velocity on like slopes with less liability to be impeded by obstructions, a lower minimum angle of flow and hence a less angle of slope for the lava-cones. The crater of a great volcano has always its beginning in a great discharging fissure' (Dhishaṇā) 'or in the crossing of two

fissures' (Araṇī in the dual). The crater is the indicator and future builder of the cone. The liquid material of the extremity of a conduit works outward from the hotter centre through the fusing heat and the boiling and other cauldron-like movements, and hence where the mobility favours freedom of action in these respects it tends to give the basin or crater a nearly circular form with steep sides.' (Vaikuṇṭha.) 'Such pit craters are normally circular. The lava-lakes send forth vapours which produce the play of jets over lava-lakes with the muffled sounds and the tremor of ebullition.'

'Pra tad Vishṇus stavatē Vīryēna mrigō na bhīmah kucharo girishṭhāh.'

(Vishṇu fumes with energy like a dread beast moving in the hollow of the hills.) 'But these vapours have not produced the great eruptions in Kilauea. They occasion only its quiet or lively activity in periods of regular work between eruptions. I may add that the vapours are bad for fuel as they tend to put the fires out, but good for work.' (Sōma is good as fuel *and for work*.) 'There is another and perhaps perpetual source of work during the life of a volcano, as it is a perpetual source of heat, namely, the ascensive force of the conduit lavas. But, unlike the vapours, it is an invisible agency slow in its irresistible movements. What its limitations are and what its source, still remain undetermined.' (The primary source is expansive Brahman or

hydro-carbon and hydrogen gases. It is supplemented by beds of petroleum or coal; and artificially for earth-born kings by surrounding the king-cone with Sōma and sending it underground to the lava in the cone.)

'Yāvanmātram ushasō na pratīkam suarṇyō vasatē mātariṣvah
Tāvad dadhātyupa yagnamāyan Brāhmaṇō hōtur avarō nishidan.'

[So long as Mātariṣvan (steam) is dressed with winged birds (hydro-carbon gases) glowing like the dawn, so long doth the Brahman (condensed hydro-carbon vapours, pure naphtha) going under the hōta (lava) and taking a lower seat, uphold his liquidity (Yagnam).] 'An incidental result of the projectile action is the formation of capillary glass or Pele's hair. In the jetting and splashing of the lavas' (rejoicing) 'the glassy part of the lava is pulled out into hairs. The drops of lava draw after them the glass thread or two drops spin out a thread a yard long between them.' [This is Hrishīkeṣa, Vishṇu whose hairs stand on end with joy (harsha).]

'Vesiculation, the making of bubble-like cavities in a melted rock, is a noiseless unseen effect of the vapours that are rising and expanding *within* the lavas.' (Water absorbed in lava and forming these vesicles is Tanūnapāt. Vesicles forming part of the original magma itself are Brahman, while hydro-carbon bubbles absorbed from without are Gīh and the absorber is Gīrvāṇa.) 'In spongy thread-lace

scoria the vesicles are 98 to 99 per cent of the mass.'

The above extracts refer to Mount Kilauea. The following are taken from the description of Mount Loa, which is Vishṇu's 'Paramam padam' (highest place) in these days.

'During the night a brilliant light appeared at the summit looking like a small beacon-fire. In a week the light disappeared. In the meantime the lavas had commenced their discharge. The lava rushed along the tunnel-like way with awful speed and large stones thrown on the surface were carried instantly out of sight without sinking into the stream.'

'For two or three weeks a brilliant and lofty column of light was seen over the mountain.'

'From Hilo a column of clouds was seen by day which was fiery by reflection at night.' (This is the Lord's pillar of cloud by day and pillar of fire by night.) 'When first seen, the light looked like a planet just setting over the top of the mountain. In a few minutes the whole summit was brilliant and a stream of lava commenced its flow. Forty hours later the fires had apparently become extinct, but after three days, on the 20th, the chief flow began at a point on the eastern side 10,000 feet above sea-level near the terminus of a line of fissures leading down from the place of the first outbreak. The escaping lavas rose at first in a lofty fountain and then flowed

eastward for 20 miles. On the 27th, Mr. Coan found the lavas playing to a height of four to five and seven hundred feet in ever-varying forms of towers, pyramids and spires with variations also in colours from white heat to red above and then to grayish red and gray. Great volumes of lava were ascending and descending, not intermittently but continuously, and the surging roaring, booming sounds were almost deafening, *but without earthquake from beginning to end.*' (These rotatory fountains of lava playing to seven hundred feet are the 'Chakra' of the mighty chakrāyudha.) 'Mr. Kinney, speaking of the sound from the cataract of liquid lavas, says, "Its deep unearthly roar, which we began to hear early on the day before, waxed louder and louder as we drew nearer the action, until it resembled the roar of the ocean's billows when driven by the force of a hurricane against a rock-bound coast or like the deafening roar of Niagara."'

'This description attests the fountain-like character of the discharge. Mr. Kinney made the height of the jets, four to eight hundred feet. He reported also that the heat created terrific whirlwinds which stalked about like so many sentinels bidding defiance to the daring visitor. The diameter of the crater from which the fountain rose was about one thousand feet, the height of the crater, hundred to hundred and fifty feet; height of the fountain, two to seven hundred feet, rarely below three hundred

feet; diameter of the fountain, one to three hundred feet, and rarely perhaps reaching four hundred feet. The jet of fire sometimes shot up into a tapering gothic spire of seven hundred feet, then rose into a great mass three hundred feet in diameter, but varied at top with points and jets like the ornaments of gothic architecture. He adds that to appreciate the most *terrific* element in the *sublime composition* you should stand at the foot of Niagara or on a tempest-lashed shore; for "the force necessary to raise two hundred thousand to five hundred thousand tons of lava at once into the air would not be silent in its operations." The lava-stream is stated to have a depth, in some places, of two or three hundred feet.'

'A glowing point of light was seen, which rapidly extended and it was soon evident a lava-stream was on its way down the mountain. *No* earthquake had announced this eruption. After flowing freely for a while, the stream often cooled and hardened along the front and remained inactive several days; at length immense areas of the *solidified* lava, four, five or six miles from the extremity, are again in motion, cones are uncapped, domes crack, hills and ridges of scoria move and great slabs of lava are raised vertically or tilted in every direction.' (That is the great Jagannath car of Vishṇu.) 'On 9th February the lavas issued at a white heat apparently as liquid as water and dashed along in cataracts and rapids

at such a rate that the eye could scarcely follow it. Sometimes no liquid lava could be seen and the only motion was the rolling of jagged rocks of all sizes down the front of the embankment. Sometimes it broke through the embankment and flowed on, carrying jagged rocks of all sizes on its back, which looked like *hills walking*. The top of the mountain was covered with snow, a source of percolating water.' [Evāyamarut, literally 'helpful maruts' who helped Vishṇu with steam-power when he made his step flows in the highest mountain range (Brihaddivā) as recorded in the great and sonorous hymn of Atri, the last of the fifth mandala.] 'Loud explosions were heard all night long and like the report of heavy cannon.'

'Fountains rose to a height of five to six hundred feet along the line of fissure for a mile. The lavas were blood-red, yet *as fluid as water*. Sometimes two of the fountains joined and then all four were united. At one time they subsided for a few minutes and then burst out again and went to a height of 1,000 feet. Large stones and rocks were thrown up, some weighing a hundred tons and so many that they seemed to fill the air.' (These basaltic bombs with concentrated titaniferous iron in the core are Vishṇu's gadā.) 'The lava of the fountains is stated to have had a *rotation* to the south.'

Vāmadēva says of Indra:—

'Sam-yatta Indra manyavah sam chakrāṇi dadhanvirē Adha tvē adha sūryē.'

'When your fumes of anger glow and your wheels (rotatory fountains of lava) shoot up, in you we see them and in the sun.' The sun in the above verse is the Vaiṣvānara. 'When the gods established this Vaiṣvānara in the heaven as the sun born of Aditi and when the couple (heaven and earth) began to move (having been united in a close embrace by Vrita), then all volcanoes saw the light of day.' (Mandala X, Hymn 88, Verse 11.) This is why the week commences with Ādityavāra or Sunday. There can be no doubt these fountains were due to Vishṇu, who, greater far than trachytic Indra, took second place as Upēndra just as he took the place of charioteer to Arjuna, son of Indra, destroyed the maleficent volcanoes which disturbed northern India and gave peace to the river valleys from Kashmir to Rajgarh, whence mighty Jarāsanda threw a bomb which reached to within a few miles of Muttra.

'The lava flowed at 10 to 25 miles an hour in a rapid stream to the sea. A cinder or tuff-cone was first made which was first an island and then became joined to the mainland by the flowing lava. The eruption ceased after five days' activity.' (The reader will have noted how quickly the crust cools and can easily realise how Lord Vishṇu bridged over the Red Sea for his chosen by dividing it with his own body, and overwhelmed their enemies by letting the seas return and reunite.) 'Mr. Coan observes that the lofty columns of light

about the summit at night were proof of violent ebullition and for nine months the action within 'the great crater' (Vaikuṇṭha) 'had not remitted. The great marvel was its duration, without any outside results. Within two miles of the crater monitions of activity were apparent in a distant vibrating roar, and on reaching the crater edge the roar was like that of an ocean rising and falling "like the thunder-music of windward Hawaii."'

'Occasional detonations were heard, but no shakings except the tremor from the throw and fall of the lavas. At one time the jets, after long playing at a height of three hundred feet, suddenly became quite low and for a few seconds there were "cones of fire wallowing in a sea of light," a description which, like most of Miss Bird's word-pictures, *is to the life*, and then "with a roar like the sound of gathering waters, nearly the whole surface of the lake was lifted up by the action of some powerful internal force and its whole radiant mass rose *three* times in one glorious upward burst estimated by the height of surrounding cliffs to a height of six hundred feet. Among the varied forms of the fountain there were the low rounded dome; a spire at the centre with a fountain on either side in the form of a wheat-sheaf; and one great wheat-sheaf.' A great upstart volcano like Śiśupāla may rear his head to regal heights, shake the earth and spit contemptuous ashes and loud words of insult at the mighty low-lying Lord, may for a time

overwhelm his glorious body with stones and currents of mud, but when Hrishīkēṣa at his own time chooses to blow his Pānchajanya and rotates his Chakra thrice, Śiśupāla then realises the might of the Lord who established the foundations of this contemptible crust and issues from the lowest depth of depths (adhōkshaja), and he then says 'Lord Vishṇu! absorb me into your mighty bosom from which I rose. I am but as an ant-hill unto you.' Of course, Vishṇu is not a fair fighter. Stupendous in might and mass, quick in movement, the source and regulator of all things into whom all creation finally merges, he is here, there, and everywhere. He hides his light in a bushel when his silly enemy glares and thunders, does not produce the faintest tremor, the enemy thinks he has triumphed over Vishṇu, when lo! he rises right under his enemy and round him and absorbs him, or undermines him, and throws aside his carcass to be a warning to all creation of the might of the Lord and the folly of those who would measure their might with his. But let me continue the description of the living Lord by those privileged to see him in these degenerate days.

'The display of light on the 14th,' says Mr. Coan, 'was most glorious. The columns of illuminated steam rose with fearful speed to a height of 14 to 17 thousand feet and then spread out into a vast fiery cloud. A remarkable bubbling was seen in the sea, blocks of lava two feet

square came up from below striking and jarring the boats and nearly all the pieces on reaching the surface were red-hot. As soon as they became cold they sank. On its way the lava stream came in contact with a stream of water, blocked and turned it out of its course. I saw it pass over a waterfall. At first the water cooled the lava sufficiently to make it brittle and it fell over in chunks till it had formed a hill as high as the fall and then it flowed over, forming a flume of lava. It was a wonderful sight to see the water and the lava flowing side by side.'

'Ava tvē Indra Pravatō nōrmih giro, Brahmāni Niyutō Dhavantē.'

(Below you, O Indra, bubbles, rising vapours, and eddies boil as below a cataract.) Note the word 'Gīh' used for bubbles and Brahman for rising vapour. The boiling lake of lava is exactly like a maelstrom as the reader has already realised.

'The drifting of Pele's hair thirty-five miles to Hilo on such occasions is as good testimony to the playing of jets or fountains as a note from an observer at the summit.' The flying of Hrishīkēṣa's hair is proof that he is in a joyous or warlike mood and is working his Chakra playfully or seriously. Indra who could not bear to have the Maruts mentioned in the same breath with him by Agastya and threatens to destroy his yagna, tamely puts up with insults from Vishṇu. Vishṇu plainly tells him:—

'I go with my body before you, and all

the gods follow me behind; when you bore a share of me in you, by me you performed your hero works.'

Vasishṭha realised the full greatness of Vishṇu. Vishṇu is from 'Vish' to interpenetrate in a sheet. He flows between beds of sediments and these Vikramas called step-flows or sheet-flows in Geology are the chief support of this earth. In hymn 99 of his mandala, Vasishṭha praised him thus:—

'You who swell and swell with your immeasurably great body, nobody enjoys your greatness. We know you in these two banks of the Priṭhivī, you alone know your birth in the highest heaven. O Vishṇu, nobody that is born or is being formed, reached the end of your greatness. You pillared up the great line of junction (nāka or the meeting line of weakness along the central range) and supported the eastern elevation of the Priṭhivī.' (The eastern elevation of Priṭhivī is probably the Mayumla pass where the old Sutlej valley is parted from the new Brahmaputra valley. It is the meeting place of two great longitudinal valleys sacred to man.) 'You fixed and pillared this great pass, O Vishṇu! and the two transverse valleys became fertile, full of hot springs, productive of good barley and fit gifts for man, and you supported the Priṭhivī (longitudinal valley) with dykes (Mayūkha) along and against it.'

In hymn 100 Vasishṭha says:—

'Thrice this heaven-born, by his own greatness, flowed in steps through this Priṭhivī, with

hundreds of Riks' (from decomposing peat-moss); 'let Vishṇu be stronger than the strongest and the name of this heavy God is "dazzling brilliancy." Wishing to gift this Pṛithivī for cultivation to man this Vishṇu flowed in steps.'

'Even the little ones (cones) born of him are firm and long-lived!'

Vasishṭha and all the Rishis associate Vishṇu with every great work accomplished by Indra; and as already remarked, Vishṇu himself tells Indra that it was because he (Vishṇu) was kind enough to flow with him, Indra became a hero. Indra and Vishṇu, according to the Rishi, widened the landscape for yagna by creating the sun, dawn and Agni. Together they broke down the hardened (note the word drimhitāh) moraines nine and ninety of Ṣambara. In the later samhitas Vishṇu became the sole yagna-purasha and ran high above all the gods, submerging their flows. ('Upa-ryupari adhāvat.') This association of Vishṇu with Indra in the latest eruptive flows and overwhelming them later on has been noticed all over the world. I quote from Hull's "Volcanoes Past and Present."

The plateau country of Utah and Arizona.

'Round its margin extensive volcanic tracts are found with numerous peaks and truncated cones, of which Mount San Francisco is the culminating eminence. South of the Wasatch and occupying the high plateau of Utah, enormous masses of volcanic products have

been spread over an area of 9,000 square miles, attaining a thickness of between 3,000 and 4,000 feet. The *earlier* of these great lava floods appear to have been *trachytic* but the *later, basaltic*. Extensive lava-fields surmounted by cinder-cones occupy the plateau on the western side of the grand cañon. Other parts of Arizona are overspread by sheets of basaltic lava, through which old 'necks' of eruption formed of more solid lava than the sheets rise occasionally above the surface and are prominent features in the landscape.'

Dīrghatamas says of Vishṇu :—

'Dvē id asya kramaṇē svardriṣō upasthāya martyō bhuranyati.'

'Two of his sheet-flows which have reached the surface, mortal cones stand under and pierce.' Aditi, the great mountain-plateau, is, of course, Vishṇu-patnī as Vishṇu by his sheet-flows is her Bhartā (supporter).

'Mount Shasta is a very lofty mountain of volcanic origin and has a secondary crater-cone named Shastina, round whose inner side the stream of glacier-ice winds itself surmounting the rim of the crater and shooting down masses of ice into the great cauldron.' (Just like Vyamsa glacier covering Indra's mother.) 'Length of the glacier, 3 miles; breadth, about 4,000 feet. Another very lofty volcanic mountain is Mount Ranier consisting of three peaks. This mountain appears to be formed mainly of trachytic matter. The present Great Salt Lake and the smaller neighbouring lakes called

Utah and Sevier are but remnants of an originally far greater expanse of inland water described under the name of Lake Bonneville. The waters of this lake appear to have reached *their highest level* at the *period of maximum cold* of the post-pliocene period, when the glaciers descended to its margin.'

The above will enable the reader to realise how Vritra bunded up the waters and how the gods rose round the edge of Aditi's waters.

'Aditēr adbhyah pari.'

To proceed with Lake Bonneville. 'Eruptions of basaltic lava from successive craters appear to have gone on before, during, and after the lacustrine epochs.'

Region of the Snake River.

'The tract of country bordering the Snake River in Idaho and Washington is remarkable for vast sheets of plateau-basalt with which it is overspread, extending sometimes in one great flood farther than the eye can reach and often without any visible crater or vents of eruption. In Oregon the plateau-basalt is at least 2,000 feet in thickness, and where traversed by the Columbia River it reaches a thickness of about 3,000 feet. The Snake and Columbia Rivers are lined by walls of volcanic rock *basaltic above and trachytic below* for a distance of, in the former, 100 miles, and in the latter, 200 miles.' (Lord Avebury will now understand how Indra first cut out new beds for the post-glacial or modern rivers.)

'The lavas appear to have swelled up in mighty floods without any of that explosive violence generally characteristic of volcanic action.' (This, of course, applies only to Vishṇu.) 'This extravasated matter spread over wide fields deluging the surrounding country like a tide in a bay and overflowing all inequalities.' (This was why Aditi was 'anarva.') 'Here also we have evidence of older volcanic cones buried beneath *seas of lava* subsequently extruded.' Sir A. Geikie has described the Utah region of the Snake River as below:—

'We found that the trachytic lavas of the hills had been *deeply trenched by the lateral valleys* and that all these valleys had floors of black basalt that had been poured out as the last of the molten materials. There were no visible cones or vents from which these floods of basalt could have proceeded. We rode for hours by the margin of a vast plain of basalt stretching as far as the eye could reach, and I realised the truth of Richthofen's assertion, that Vesuvius and Etna present us by no means with the grandest type of volcanic action, but rather belong to a time of failing activity and there have been periods of tremendous energy when the lava found its way to the surface by innumerable fissures opened in the solid crust of the globe over thousands of square miles.'

When Mahā Vishṇu (Perumal) flowed in intrusive and far-extending sheets between

sedimentary beds he gave us support. His was the highest Dharma for the living creation. Through his body under Aditi and with his magma modified and weakened rose the gods and earth-born heroes who ostensibly fought and destroyed the glaciers. He was Trivikrama Vishṇu who rose as a dwarf. Of course great Vishṇu is a humble dwarf. He does not rear himself up like the other gods into a sky-piercing cone and issue his thunderous challenges to one and all. He comes out of his little hole and asks for a little breathing space, and then the reader knows what happened to the Emperor Mahābali. As a trap-rock he has given support and scattered beneficence over the black cotton country. But when as black Krishṇa, Vishṇu overwhelms the living creation as in Idaho and in Brindāvana he is Janārdana and for many centuries nothing grows on his huge body but purple Tulasi (brindā), the basil plant. To write a book about Vishṇu is a presumptuous superfluity. He has written his name all over the face of the earth and below it, and he is the Chaitanya at the centre of the earth as well as the sun. In two mighty tomes he has written his name in his own way. As Ādivarāha he wrote with his tusk in Hiraṇyāksha, and as Nrisimha he wrote his name in Hiraṇyakaṣipu and tore, sheared, and crumpled the books which he fashioned. I will now describe these mighty deeds of Vishṇu.

Hiraṇyakaṣipu is literally the golden-

coloured flaker splitter or peeler, and Hiraṇyākṣha is 'golden-eyed.' The former is crystalline schist and the latter gneiss. Ruskin thus describes them in his chapter on slaty crystallines:—

'The color of their own mass when freshly broken is nearly the same as the compact crystallines; but it is far more varied by veins and zones of included minerals and contains usually more iron, which gives a *rich brown or golden colour* to their exposed sides, so that the colouring of these rocks is *the most glowing* to be found in the mountain world. They form also soil for vegetation more quickly and of a more fruitful kind than the granites and appear, on the whole, intended to unite every character of grandeur and beauty and to constitute the loveliest as well as the noblest scenes which the earth ever unfolds to the eyes of men. The central granites are too far removed, the lower rocks too commonplace and these slaty crystallines form the noblest hills that are easily accessible. Well, we begin to examine them. We find a notable hardness in them and a thorough boldness of general character. They have nothing like the look of dried earth' (manu) 'about them, nothing petty or limited in the display of their bulk. Where they are, they seem to form the world; from the lowest valley to the highest clouds *all is theirs—one adamantine dominion and rigid authority of rock.* We yield ourselves to the impression of their *eternal unconquerable stubbornness of strength.*'

And yet what did the terrible Varāha and Nrisimha do to these emperors of all they surveyed? 'Behold and as we look farther into it, it is all touched and troubled like waves by a summer breeze; *they* only undulate along their surfaces—this rock trembles through its every fibre. *Into the heart* of all those great mountains, through every tossing of their boundless crests flows that strange quivering of their substance. Other and weaker things seem to express their subjection to *an Infinite Power* only by momentary terrors. Not so the mountains; they who at first seemed strengthened beyond the dread of violence or change, are yet ordained to bear upon them the symbol of a perpetual fear. The tremor which fades from the soft lake or gliding river is sealed to all eternity upon the rock.'

The dread of Varāha (hard-tusked like a boar) gabbro, and Nrisimha (Peridotite Vishṇu), hard-toothed like a lion was impressed upon Hiraṇyakaṣipu and Hiraṇyāksha for all time to come.

By his terrific thrusts he made them into books made up of thin folia, and both the crystalline schists and gneisses are characterised by foliated structure and the crystals of felspar and other minerals in gneiss are converted by crushing movements into 'eyes,' the eye-structure being magnificently developed in some of the gneisses. Varāha and Nrisimha further fertilised them and filled them with minerals out of their own substance. How beneficent this work was to Manu, let Ruskin explain.

'The hardness of the substance of the higher mountains renders it a matter of great difficulty for the peasant to break them into such masses as are required for his daily purposes. The flattened arrangement of the layers of mica always causes the rock to break into flattish fragments requiring hardly any pains in placing them so as to lie securely in a wall, and furnishing light, broad, and unflawed pieces to serve for slates upon the roof; for fences, when set edgeways into the ground; or for pavements, when laid flat. Farther, whenever rocks break into utterly irregular fragments, the masses of *débris* which they form are not only excessively difficult to walk on, but the pieces touch each other in so few points, and suffer water to run so easily and so far through their cavities, that it takes a long series of years to enable them either to settle themselves firmly, or receive the smallest covering of vegetation. Where the substance of the stone is soft, it may soon be worn down, so that the irregular form is of less consequence. But in the hard crystallines, unless they had a tendency to break into flattish fragments, their ruins would remain for centuries in impassable desolation. The flat shape of the separate pieces prevents this; it permits, almost necessitates, their fitting into and over each other in a tolerably close mass, and thus they become comparatively easy to the foot, less permeable to water, and therefore retentive both of surface moisture and of the seeds of vegetation.'

'There is another result of nearly equal importance as far as regards habitableness on the hills. When stones are thrown together in rounded or massy blocks, like a heap of hazelnuts, small force will sometimes disturb their balance; and when once set in motion, a square-built and heavy fragment will thunder down even a slightly sloping declivity, with an impetus as unlikely to be arrested as fatal in its increase. But when stones lie flatly, as dead leaves lie, it is not easy to tilt any one of them upon its edge, so as to set it in motion; and when once moved, it will nearly always slide, not roll, and be stopped by the first obstacle it encounters, catching against it by the edge or striking into the turf where first it falls, like a hatchet. Were it not for the merciful ordinance that the slaty crystallines should break into thin and flattish fragments, the frequent falls of stones from the hill sides would render many spots among the greater mountain-chains utterly uninhabitable, which are now comparatively secure.'

It is Nrisimha that produced the serpentine and hornblende schists and gabbro (Ādi-Varāha) the gabbro-gneiss with 'brown eyes.' The reader will now realise that the Riks have the authority of men who witnessed the phenomena described in them, while the Purāṇas relate to events anterior to the Riks but studied as a modern geologist studies the earth. To understand the Purāṇas a knowledge of the Riks and its technology is obviously

essential and it was because I was assured of the identity of Vishṇu by reading the Riks I was equally sure of the identity of Hiraṇyakaṣipu and Hiraṇyāksha. Mahābali Chakravarti is the grandson of the crystalline schists and is the younger granite or granulite distinct from the ancient intrusive granite which forms the deepest portions of the crust of the earth as well as its highest in the loftiest peaks of sky-piercing Himālaya. I do not understand who Hiraṇyakaṣipu's son Prahlāda is and how Nrisiṁha compacted a constituent of the crystalline schists he crushed and pierced into the strong metamorphic granite through Prahlāda's son or derivative Vrōchana. It was this younger granite which afforded a good support for soil and life which Vishṇu overflowed as Trivikrama, and which the Nambūris of Malabar believe will emerge into the light of day in the near future when his covering of Vishṇu's sole is worn away.

CHAPTER VIII.

THE TEN AVATĀRS.

I WILL now deal categorically with the ten avatārs of Vishṇu. The Purusha, so far as the surface of the earth is concerned, is concentrated in the mountain ranges.

'Pādō sya viṣvā bhūtāni Tripād asyāmritam divi.'

When he descends from the mountains by eruptions and sub-aërial flows, he deals out destruction or beneficence to the valleys below. When he comes underground and is born in the earth as a volcano, that is an avatāra, a descent. Rising through sedimentary rocks (manu), he is a Mānava. Rising in a longitudinal valley below a mountain range, he is a Pārthiva. Rising in the high ranges he is a Dēva. The ten avatārs are Matsya, Kūrma, Varāha, Nrisimha, Trivikrama, Paraṣurāma, Rāma, Balarāma, and Krishṇa with the tenth avatār Kalki to come. Of these, Matsya and Kūrma are not avatārs properly speaking. Matsya is the fishlike sediment deposited and compacted, layer by layer, scale by scale, in the nummulitic seas of the Eocene age. When this sediment dried at the edges and the old shore lines hardened, then the mighty

Varāha gave a series of tangential thrusts which threw the sediment into ridges and longitudinal valleys. The later Vēdic Rishis speculated on the origin of the mountain ranges and valleys and arrived at the conclusion that Viṣvakarman elevated the earth and produced them,

'Yadā hyantā adadrihanta pūrvē.'

This inference was fully developed by the Paurāṇikas. This great fish, about ten miles in depth, is called by the geologists a geosynclinal (earth-trough). The mighty boar by its thrusts converted the fish into a land tortoise (Kūrma) which is called a geanticlinal in geology. Look at the back of a land-tortoise and you will realize the wonderful appropriateness of the name the Paurāṇikas gave to the geanticlinal. They took these names from their familiar surroundings with an unerring eye to appropriate analogies as they wrote for all the ages and for all classes of men. As I said, the Matsya and Kūrma are not forms of Vishṇu and this is called Ṣvētavarāha Kalpa and not Matsya Kalpa and I do not believe that among the Vaishṇavas proper anybody is called Matsya Char or Matsya Rao. I have no idea why this Varāha is called Ṣvētavarāha. It may be that it issued mixed with the nummulitic chalk and was of a pale colour compared with the Ādi Varāha (intrusive gabbro) which crushed Hiraṇyāksha. The next great appearance of Vishṇu at and near the surface was as Nrisimha. This I have identified with peridotite, though it may be basaltic porphyry rich

in olivine. Nrisimha was probably associated with granitic intrusives and that perhaps is the reason why the Vaishṇavas recognise that Nrisimha is closely connected with Siva. The next great form of Vishṇu is Trivikrama Vishṇu when he took his mighty strides under Aditi, rising higher and higher till he reached the highest crystalline peaks where even the birds could not reach him. Owing to his weight and his enormous mass, Vishṇu cannot rise very high, though in a long-distance race he can beat any competitor owing to his perfect liquidity and energy. But as Trivikrama he rose as a Brāhman from great reservoirs of petroleum and hydro-carbon gases. Big of body and good-tempered and with all the underground world and its hollows and lines of weakness to roam over, he rarely issues at the surface of the earth (his own light being far more brilliant than the sunlight) and prefers to energise and support the earth *from below*. When he does issue and he is obstructed by rocks he takes an easier way by some underground passage. This time he rose winged with hydro-carbon gases and when Mahābali permitted him to advance three feet, he completely overran Mahābali and rose to the third heaven of Aditi, the central crystallines whence he long shone from his vents as brilliant eyes lighted up and fed by ever-awake Brāhmans (naphtha).

'Tad Vishṇōh paramam padam sadā paṣyanti sūrayah

Divīva chakshurātatam.

Tad viprāso vipanyavah jagrivāmsassamindhatē.'

Of course, when Vishṇu reached the Antariksham, the Maruts too helped him with their Svadha (steam) as they helped Indra in later days. I have already noted that this progress of Vishṇu to the heavens is described in the Evaya Marut hymn of Atri.

I strongly suspect that when he took his second step he flowed between the great beds of lignitic coal which formed prolific sources of petroleum and the Brāhmans to whom petroleum was everything in the glacial period, prayed that Vishṇu might never more ascend into the mountains in his true form and full might, when they found that his mighty mass cut off for ever a most valuable bed of coal (mother of the Bhārgava Brāhmans) and put it out of their reach. This probably is the origin of the curse of Bhrigu and the appearance of the next great avatār of Vishṇu as Rāma in the Purang valley of Thibet, drained by the upper streams of the Sarayu. The Indian reader will note that the Vishṇupāda of Gaya representing the Trivikrama step flows, figures the sole of Vishṇu's uplifted foot as he flowed from the earth to the mid-region and on to heaven as Uttāna-pād. Parasurāma was but a minor manifestation of Vishṇu. Towards the end of the Samhita period the Rudras (rhyolites) grew in might and power simultaneously with Vishṇu's

supersession of Indra and renewal of independent activity. It was a time when, animated by rhyolite and basalt and sustained by organic remains of far-off æons, silurian, devonian, carboniferous, jurassic and permian, great volcanoes rose in the slaty crystallines, and of these the greatest was Kārtavīryārjuna. This Kārtavīryārjuna was in all probability a great volcano with a number of vents near its shoulders from which rhyolite as well as basalt flowed like a thousand arms. Arjuna (white) represents white rhyolite and Kritavīrya may signify 'energised' by basalt. The reader will carefully note that when a volcano is in its regimen (vrati) when its activity is mild (mandra) and regular, when the lava issues from the vents at regular intervals sending down fertilising snow-streams, when his feet are clothed in productive tuff, when he sows the valleys below with precious stones and ores brought down by intrusive veins or currents of underground Vāyu, when he does not throw out rounded stones (yātu) or spread bristling scoria (vrikatati), he is a 'Suvrata,' 'Maghavā' and 'Rājā' (constitutional, beneficent, glorious king) and it was the duty and happiness of those who flourished under his sway to offer him the choicest share of the Sōma as well as the vegetable and animal life which he produced and nourished. The greatest type of a constitutional beneficent ruler is the sun, who is the greatest of 'vratis.' The greatest type of a beneficent ruler on

this globe was Savitar Vaiṣvānara who rose thrice a day regularly as the sun, through Mitra and Varuṇa and sent down sweet streams for the valleys below.

'Trir ā divo Savitā Sōshavīti
Rā ānā Mitrā Varuṇā Sūpānī.'

Vaiṣvānara Sūrya or Savitar was the more beneficent as his activity was also subterranean and he gave us thermal springs, ores and precious stones as Bhaga, fertile soil out of his own body, and elevated the earth, while the sun in the sky gives only heat and light from above, creates soil by slow weathering and reduces everything to a dead level. The sun, however, asks for no food, takes no taxes, while Vaiṣvānara absorbs Sōma and snows to energise him and enable him to continue his ordered activity. The sun in the sky and the Vaiṣvānara Āditēya sun in the highest heaven are the two well-winged birds referred to in the famous verse of blind Dīrghatamas. When a volcano, however, takes to divert or destroy a most motherly river like the Ganges, or to overwhelm great beds of petroleum, crude or distilled (Rishis or Brāhmanas), he is a wicked king and an enemy of the human race of the worst kind. As stated in text-books of Geology he may throw himself as a great embankment across a great river, pond back the waters, and form a lake. His molten current may usurp the channel of the stream and bury the whole valley, as has happened again and again in the vast lava-

fields of Iceland. No change in Physiography is so rapid or so fraught with disaster to life as this. The channel excavated by thousands of years of labour is filled up in a few hours with hundreds of feet of stone. The beneficent operations of running water, flowing springs and lakes, and all the glad life that springs therefrom are destroyed in a fit of fury and overwhelmed in a stony sheet hundreds of feet thick. This is what the Rishis mean when they say that Agni became a Rakshasvī, or a good king became a Rākshasa. A rock-throwing king who destroys women and Brāhmans (rivers and petroleum) must be destroyed. If Indra or Rudra (trachyte or rhyolite) strengthens him, or Brahman (when he rises through petroleum beds) gives him vigour and long life, he sometimes becomes too powerful for the ordinary gods, and then the living creation which he defiles and destroys, wails for mighty Vishṇu and the very gods who created and strengthened the monster pray to Vishṇu for help to destroy him. Kārtavīryārjuna was a good king first, and I extract the following description of this king from the second volume of the "Indo-Aryan Mythology," a book of great erudition written by my good and saintly friend Mr. Narayaniengar:—

'Arjuna conquered the whole earth and became emperor. At the time of battle 1,000 shoulders would spring up in his body by his power as a yōgin. The contrary current of the tide produced when he bathed in the sea

beating the water with his 1,000 shoulders, rushed into the river Narmada, wave after wave, and the commotion of his bathing in the sea was like that caused by Mount Mandara in the churning of the milky ocean for nectar. To satisfy the hunger of Agni he gave all the continents to him who blazed everywhere with his flame and ate many forests including Vasishṭha's forests.'

This is extracted from the Harivaṃśa. From the Vāchaspatya Mr. Narayaniengar extracts the significant assertion that Arjuna was an incarnation of the Chakra weapon of almighty Vishṇu. His beneficence during his period of ' regimen ' was unequalled according to Nārada, but exhausting his Sōma supplies, he became paroxysmal and began to satisfy the Agni within him by invading and destroying beds of coal and petroleum and he was cursed by the Riṣhi Vasishṭha whose forest Arjuna's Agni destroyed. He rose near the junction of a river with an inland sea which must have been the sea round Varuṇa as Arjuna is said to have conquered Rāvaṇa and surrounded him, though he abstained from destroying him at the intercession of Rāvaṇa's Brāhman ancestor Pulastya who probably turned him aside by Sōma offerings. When Arjuna attacked and led away the sacrificial cow of Jamadagni, and his sons and warriors destroyed Jamadagni himself, Vishṇu then rose as Paraśurāma through beds of distilled lignite, cut out Arjuna's thousand shoulders with naphtha-charged basaltic

dykes shaped like axes, and destroyed him. Paraṣuṙāma destroyed several other volcanoes with their numerous subsidiary cones and made five great crater-lakes of them coloured red by volcanic dust. Thus the gift of the earth by Viṣvakarman to Kāṣyapa after the destruction of the serpents was repeated by Vishṇu as Paraṣurāma when Viṣvakarman returned to the earth in the shape of maleficent volcanoes destroying rivers and petroleum the two great mainstays of life on earth. Kāsyapa's dominion was, however, once again challenged by another monster with ten heads, the great Rākshasa, who made the living creation cry and was appropriately named Rāvaṇa. The Vēdic Rakshasvī or Rakshāh is the later Rākshasa. Rakshās is identical with rock. In the hymn to Parjanya, (Mandala V, Hymn 83, Verse 2,) the thunder-cloud is said to strike the trees and to strike the rocks inspiring dread into all existence.

'Vi vrikshān hanti uta hanti rakshasah.'

The rock-destroyer in a pre-eminent sense is Sōma. When Agni inspires a Rakshas the resulting volcano is a Rakshasvī and these volcanoes shot out rounded stones (yātu) which spread desolation far and wide. These yātus were of various sizes, flew up like birds and came down on the settlements of man. The various kinds of yātus are described by the great Vasishṭha in the most awe-inspiring of Vēdic hymns (Mandala VII, Hymn 104). Yātudhāna is a receptacle of stones rounded by

Agni and shot out with various degrees of force. A mere fissure amid rocks without a cone is a female yātudhāni. These hot rocks falling down or rolling down on the human settlements destroyed everything and charred all flesh and vegetation. At ordinary times and uninspired by lava, rocks and rock fragments are a source of perpetual dread to the mountaineer. To enable the comfortable dweller in the plains to realise the position of the mountain-deweller I will quote from Tyndall once again.

'While we stood pondering here a deep and confused roar attracted our attention. From a point near the summit of the Weisshorn a rock had been discharged. It plunged down a dry couloir raising a cloud of dust at each bump against the mountain. A hundred similar ones were immediately set in motion, while the spaces between the larger masses were filled by an innumerable *flight* of smaller stones. Each of them shakes its quantum of dust in the air, until finally the avalanche is enveloped in a vast cloud. The clatter of this Devil's Cavalry was stunning. Black masses of rock emerged here and there from the cloud and sped through the air like *flying fiends*. Their motion was not one of translation merely, but *they whizzed and vibrated in their flight as if urged by wings*.'

Vasishṭha describes the Yātus as owls, doves, kites, and eagles who flew by night and destroyed in a moment settlements created by

years of intelligent labour out of the action of Agni on Sōma, or lava on the Pitris (decaying remnants of old life). If ordinary rocks are so dreadful as described by a sober man of science, they were necessarily armed with thousandfold terrors, when heated and rounded by Agni, and Agni producing cones and fissures in rocks and multiplying their powers of destruction is Kravyād (flesh-eater), Asutrip (feeds on the breath of life) and Aṣiva (impure, evil). These Yātudhānas overwhelmed Indra too sometimes and without Sōma to explode and powder them, even Indra was powerless against them. These Rakshasvīs or Yātudhānas were the great enemies of life and yagna, of the work of the three great Ritas, liquid waters, liquid Sōma and liquid lava. Verily Viṣvakarma's shadow, as the Rishi sang, deals out death as well as immortality. When a great Yātudhāna like Rāvana is elevated into a mighty cone with the help of Sōma and strengthened by lava-flows and dykes, Agni develops into a mighty engine of destruction and the gods themselves are powerless against him. I have no idea what Pulastya Brahmā (the old organic bituminous remains) through which Rāvaṇa rose, represents, but there can be no doubt the Vēdic composers and their Purāṇic successors gave special names to the various bituminous coals, shales, sandstones, conglomerates and limestones of different ages and these with the hydro-carbons produced by Agni himself were known collectively in the later Purānas as

Brahmā (the seat of hydro-carbon gases). When Rāvaṇa rose in the waters Agni in Indra had degenerated into pale obsidian and Indra moved on his high-fronted white elephant in slow ponderous fashion swaying from side to side and comparatively powerless. Varuṇa (Ouranos) had become a Pāṣa-hasta (Poseidon). He, with his brothers Mitra and Aryaman had commenced to deliquesce even during the Vēdic period, his splendid circumference was bored and mined for petroleum, precious stones and metals, and Rishis like Ruskin cursed the wicked sinners, who by their ēnas and āgas (up-thrusts and side-thrusts constituting *faults*) produced 'Amhas' (subsidence) in level Aditi whose most splendid son Varuṇa was, and the great Āditya who boasted of a leg-cover as fertile as an artificially ploughed and manured field (Rājāmi Krishtēr upamasya vavrēh) dressed himself in swamps.

(Druhah pāṣān pratimunchatē kavih.) The treacherous men who took his oil, ores and precious stones and left holes, oil-sands and *débris* (sridha) behind, he punished with bogs and dropsy. What a swamp is to fertile well-drained land, that is dropsy to the human body. Even his own son Vasishṭha whom he distilled with his lava and purified through great snow-beds which rocked like a cradle for the immortal Vipra, even him whom he raised through beauteous Urvaṣi, Varuna embogged for his importunities, rendering himself inac-

cessible. Vasishṭha's pathetic lament over his fate is—

'Apām madhyē tasthivāmsam trishṇāvidat jaritāram.'

Thirst knew the decaying old man though he stood in the midst of waters. Peat-moss absorbs water even from the air but I have not verified if thirst is a concomitant of dropsy. The gods should be approached by Rishis with prostrations and horizontal flows (namas) and even great Rishis like Vasishṭha and Trita Āptya are precipitated into hell (Amhas) if they importune gods with side-thrusts or up-thrusts. The oldest worship among the Greeks, according to Pausanias, was the worship of fetish stones in temples and the Mangaians worshipped the pumice stone as Poseidon. That was a true symbol as degenerate Ouranos erupted light pumice, the śimyu (pricker) of the Riks which floated on the waters.

'Śardhantam śimyum uchathasya navyah Śāpam sindhūnām akriṇōd aśastīh.'

'The first (or later) eruptions made accumulating pumice, the curse and dirt of the snow-streams.'

In a deep hollow by the side of Varuṇa the great rivers which flowed over and under his body made a great lake and that inland sea was the Varuṇa-samudra. In this lake which is probably the Rakastal Lake known also as Rāvaṇa-hrud in old maps the ten-headed Rāvaṇa rose. Even in the Samhita period paroxysmal Agni had cut up Mitra as a knife carves a cow and—

'Chakshadē Mitrō Vasubhih sujātah.'

Well-born Mitra with his Vasus was wounded. Against the outposts of the great sea-born monster Rāvaṇa, against Mārīcha and Tāṭakā, who destroyed life, polluted the living streams, and desolated the life-supporting valleys of our ancestors, the great Viṣvāmitra led the mighty Rāma. Rāma, Lakshmaṇa and Sīta are not yet forgotten in the land of their birth. The Gurla Māndhāta massif represents old Manu, the brother of Yama and the son of the Vivasvān range, who rose higher than the gods and gave birth to Ikshvāku, Saryāti, Yuvanāṣva, Māndhāta and other great kings of the Solar race. It was below this great mountain which Savitar lava first penetrated and impregnated with the seeds of human life (borne along the Ṣaranyu fissure by winged Mātarisvan), that Rāma was born on the banks of the Karnāli River, which is the upper Sarayu and drains the fertile valley of Purang before piercing the mighty Himālayan wall in its progress towards the Ganges. Great Rāma was born right under the eye of stupendous Māndhātar who rears his head nearly four thousand feet above Mount Kailās. The three great rivers of the Rig Vēda are the Sindhu, Sarasvati and Sarayu. The Sindhu is the Sutlej, the Sarasvati is the Brahmaputra, and the Sarayu, the Karnāli. The Sindhu had its source chiefly in Varuṇa, the Sarasvati in Brihaspati, and the Sarayu in Vivasvān. These were the three great rivers

which saw the birth and early development of the Aryan race during the glacial period. As remarked above, the Purang valley has not forgotten her mighty warrior of the olden days. I quote as below from the intensely interesting book "Western Tibet and the British Borderland," by Charles A. Sherring:—

'A visit to the monastery at Kojarnath gave us the opportunity of seeing the country with its picturesque hamlets and beautiful green fields along the banks of the Karnāli River. The monastery is on the banks of the river, which here makes a great bend and the red colouring of the building set off by the paler hues of the village dwellings is charmingly reflected in the blue waters of the stream, while the great mountains in their many shades of sepia, red, and yellow make an imposing background. . . . We could not find one Lamaist or Buddhist image, the principal idols being Hindu representations of Rām, Lachman and the goddess Sīta (no one could tell us which was Sīta who was so like the male gods) and of the seven Rishis or the sages of Hinduism.'

Rāma was olivine basalt and the anthromorphism of the poet of the Rāmāyaṇa is of the most transparent character, not even skin-deep. The Brāhmans and the painters who painted to their instructions, represent Rāma as of a dark-green colour and that is exactly the colour of recently cooled chrysolitic or olivine basalt. It is this basalt known as greenstone which contains all the inorganic elements of fertility

and breaks down into the richest of soils. Rāma was a Kshatriya riding on horses born of Vāyu (steam) and not a Brāhman like Vāmana Vishṇu soaring on Garuda to the highest heaven. The reader probably knows who the Haris (monkey-horses) are that helped him in the war with Rāvaṇa. They are the identical Haris who dragged Indra's car, fumaroles born of the snows and waters by the action of underground lava. The puffing progress of the steam jets that drag a current of lava was likened to the progress of a monkey and the Vānaras of the Rāmāyaṇa represent the Ribhus of the Riks whom the Agōhya (Irrepressible) Agni raised up when he reposed from his eruptive activity out of volcanic gods, and are differentiated from the 'Naras' which usher in an outbreak of volcanic activity, by the prefix 'vā,' signifying similarity as opposed to identity. The Ribhus of the Rig Vēda are stufas, geysers and mud volcanoes, Ribhu being a stufa, Vibhva a geyser and Vāja a mud volcano. These were Saudhanvans, sons of Sudhanvā (good archer) as they shot up straight and high. When after paroxysmal outbursts the great gods and kings reposed leaving heaven and earth a desert of volcanic *débris* and dust, they carved out the Father and Mother (Dyāvā-Pṛiṭhivī) into beautiful terraces variegated with bright-tinted precious stones. They made the original cup of Twashtār, the steaming siliceous calcareous hot-water spring (gna) into four cups, a stufa, geyser,

mud volcano and travertine spring. They made travertine by flowing through arenaceous limestone, and thus removed the hard hide from the cow (limestone). Their lovely artistic work they spread over the heavens and earths after sleeping for twelve days (the closing days of a divine year of volcanic activity) with agōhya the unconcealable Agni. When Savitar Agni inspired them, they went up to the gods. Ribhus made the two puffing monkey-steeds who carried Indra in his days of renewed but mild and regular activity and raised for the Aşvins a car out of which they erupted hot water and mud. When Rāma warred on Rāvaṇa, the gods had become decrepit, Rāvaṇa had partially overwhelmed them with rocks and had diverted many of the divine streams. The Agni under the gods produced thousands of Ribhus or Vānaras to help Rāma onward in his march against Rāvaṇa. These then were the monkey-warriors who bore the great Rāma onward in his victorious progress which ended in the utter destruction of the dread Rāvaṇa. Hanumān, the greatest of fumaroles, was a specially powerful child of Vāyu-mātariṣvan with his source in Aditi's son Narāṣamsa. The proverbial rivalry between Garuda and Hanumān is the present-day rivalry between petrol power and steam power. When Rāma reached Varuṇa's sea and threatened to dry it up, it was no empty brag. He was the Lord and He could have done it easily as He did later on, on a small scale in the Red Sea for His chosen

Jews. This dark-green Rāma, vesiculated by steam, who destroyed innumerable hosts of scoria cones by his multitudinous and far-extending dykes shot out of fissures shaped like his Kōdaṇḍa bow, fertilised whatever he touched out of the materials of his own body, and his beneficence to the human race was never approached by any other manifestation of Agni. Sīta was in all probability the subterranean stream born in a neighbouring volcanic zone which became Rāma's wife and energised and regulated his normal activity as a householder dwelling in his volcanic home. This stream which followed him in his exile was diverted by Rāvaṇa and caused the mighty upheaval of Vishṇu's force which finally annihilated Rāvaṇa. I may note one fact in connexion with Rāma's brother before I finish with the descent of Rāma. Basaltic lava comes up from unknown depths, from Nārāyana himself in the centre of the earth. The uprooting therefore of Vishṇu is an impossibility. A great flow of rhyolite may overwhelm a smaller volume of basaltic lava on the surface; but while basalt can surround, root out and absorb or throw aside any other volcano and its Agni, the mightiest of volcanoes is powerless to harm Vishṇu at his source. This is beautifully brought out in the war chapter of the Rāmāyaṇa. When Rāvaṇa threw the Brahman-inspired Sakti weapon at Lakshmaṇa and temporarily disabled him, he tried to follow up his success by rooting out Lakshmaṇa with his

mighty arms. But says Vālmīki with full knowledge of Vishṇu's greatness:—

'Himavān, Mandara and Mēru, the earth, middle region and heaven with the immortal gods, it was possible for Rāvaṇa to lift up with his arms, but *not* the younger brother of Bharata. Though struck in the chest by Brahma 'Sakti,' Lakshmaṇa remembered he was a branch of the 'immeasurable' (amīmāmsya) Vishṇu.'' (Yuddha Kanda, Sarga 59, Verses 110 & 120.)

I will now come to Krishṇa. He is always painted dark-blue. Vishṇu is always black (Krishṇa) touched with green or blue while Rudra and Śiva (rhyolite and granite) are white. That shows how true the Brāhmans were to truth. If Krishṇa and Rāma were human beings their colour as perfect Kshatriyas would have been ruddy like 'narō agnivarṇa' or as they were special lovers of Brāhmans the latter might have made them translucent white, their own favourite complexion, that of pure distilled naphtha. Before Vishṇu's manifestation as mighty Rāma, the Prithus and Parsus (Parthians and Persians) whose ancestors were Kutsa and Suśravas (kings) and Atharva and Uśana Kavi (Rishis) had been driven west of Varuṇa on their way to Central Asia and they found types of their great Asura in Elburz and of their dread enemy the friend of the Angirasas in Mazenderan (Mahēndra). Both these mountains are volcanic. Between the Avatāras of Rāma and Krishṇa, the eastern Āryans descended from Thibet

into the Himālayan valleys of the Jumna, the Bhāgīrathi Alakananda, Sarayu, Kōsi and Gandāki. Through the great Shipki pass they occupied the valleys of the Sutlej, Beas and Ravi. Some tribes who had settled north of the Sudarsan (Kailas) Range and in the Gartok valley in the rear of the retreating Ahurians (Persians), migrated along both tributaries of the Indus and settled in the western Punjab and Afghanistan. The Prithus and Parsus must have migrated to Central Asia and Persia over the Pamirs and through Chinese Turkestan. Before the departure of the Persians from the great Thibetan plateau, there is reason to believe that the Turvasus and most of the Anus and Druhyus were driven west after the great battle of Sudas, Vasishṭha and Indra with ten kings of whom Turvasu was the leader, the Pakthas and other tribes who followed Turvasu representing the modern Pathans (Afghans) and the tribes of the North-west Frontier of India. The Greeks are said to be the descendants of Turvasu and this statement of the Mahābhārata may be correct. They are known as Yavanas in Sanskrit literature. It is hardly necessary to note that these emigrants carried the names of rivers and settlements in their motherland of Thibet to their new settlements and when they found manifestations of volcanic activity in the new country named them after the great originals in far-off Thibet. It may safely be assumed

that when the eastern Āryans commenced their migration into India, the great Himālayan and Thibetan rivers had only commenced their great work of spreading and consolidating their alluvium into the fertile plains of Upper India and that the new settlements were confined to the upper reaches of the great rivers and were liable to be overwhelmed by glaciers and avalanches of all kinds. Blue-black Krishṇa, the latest Avatār of Vishṇu, was born in a Go-vraja (cow-stall) on the banks of the Jumna, and for years he was a brilliant child playing in tiny dazzling fountains in the midst of Vraja sundarīs, warm springs through which Sōma rose. The steam jets that rose above his cooling body charged with basaltic dust coruscated with brilliancy like a peacock feather.

'A mandrair Indra haribhih yāhi mayūra rōmabhih' (Come, Indra, with mild peacock-haired Haris). For long he played in the midst of these oily springs and the great volcanoes presiding over kingdoms from Magadha to Kashmir knew their danger, and his royal relations closest to the danger tried to smother and suppress him, but nobody dared to come to close quarters with the Almighty child. Fissures must have opened on the south side of the Himālayan wall and the great magmas of lava which burst through the mighty obstacle raised a series of cones, good, bad and indifferent, parallel to the long stretch of the great chain. There is good reason to believe that the great rivers of

Thibet, the Sutlej, the Sarayu, the Brahmaputra (Sarasvati) and the Indus discharged into four great inland lakes as the Rhone discharges into the Lake of Geneva and that it was the emptying and drying up of these lakes when the Himālayan wall was tunnelled or broken through, that converted the splendid plateau of Thibet, the mighty high-born mother of gods, heroes and the human race, into the dry, chill, treeless, desiccated, inhospitable, wind-swept region that we find her to-day. It was mighty Krishṇa who in conjunction with cones of trachyte, rhyolite and andesite, the derivatives of Thibetan Indra, Yama, Aṣvins, and Vāyu, finally laid the dust of volcanic sovereignty in the south of the Himālayas and the materials of these volcanic ranges washed out by the great Himālayan rivers and commingled with the mountain sediment, constitute the compacted alluvium extending from the Indus to the Brahmaputra. Krishṇa was 'Janārdana' or destroyer of surface-born beings, especially volcanic life. Out of destruction he established final peace, and made good the gift of the Bhūmi by Viṣvakarman to Kāṣyapa. He was not a fertiliser like Rāma. Once when he rushed over a beauteous stream and all the glad life that laughed round her, the result was a scorched black plateau like the Idaho plains and as in those plains, Brinda alone (black basil) rose out of his body. This last incarnation of Vishṇu who blessed and delighted the eyes of a long-past generation

with his enchanting brilliancy and playfulness who destroyed many a glacier (Dānava) and many a Rākshasa (rock-born volcano) in Himālayan Diti, who wandered from Kashmir to Magadha as a humble helper and charioteer of high-crested volcanoes who owed their strength and greatness to him, who burnt out the Himālayan forests and made the glaciers recede, who gave the final quietus to volcanic action and peace to India, this Krishṇa who filled the souls of saints with ecstatic rapture and prophetic visions, is, of course, the prime favourite of the Hindu heart and soul. The Krishṇa manifestation took place about 2450 B.C. or 653 of the Kali Era. It is now 5012 of the Kali Era and the prophecy of the Paurāṇiks was that the foundations established by Vishṇu's step-flows and dykes would disappear by 5000 of Kali, that 'adharma' (absence of subterranean support and consequent earthquakes) will reign over the earth, and that as promised by Krishṇa in the Gīta, he will create himself as Kalki when the Dharmas are loosened. Kalki will be born after 5000 of Kali when the Sun, Moon, Tishya (or Pushya) and Brihaspati meet, a conjunction which happens once in twelve years, the Gōdāvari Pushkara falling in that conjunction Kalki will be a mixture of basalt and rhyolite, the latter being the complement of Krishṇa like his white brother Balārama who was Rudra-Agni. Kalki's motor power will be a white horse (steam-power), as Sōma pavamāna

has been practically exhausted. He will still the quaking earth and re-establish peace. How the old Brāhmanas made these calculations I do not know, but I know to the cost of my vanity that they were not fanciful vapourers. One Gōdāvari Pushkara, after the appointed period, has passed away and we may in the not distant future go in for a period of earthquakes, the opening of vents and the creation of a chain of volcanoes in a line with the Himālayan Sewaliks. The Nambūris of Malabar, who have retained the old traditions and instincts intact, may be right when they believe that Vishṇu will make way for Mahābali (the younger granite) and the Arabian Sea recede, enlarging the splendid gift of Parasurāma to their ancestors. So much for Kalki. I may summarise this chapter by stating that there were only five manifestations of Vishṇu proper since the miocene (Ṣvēta-varāha-kalpa) age, that the Varāha of stupendous energy acted chiefly underground and produced the great Kūrma (mountain chains and strike-valleys) by its tangential thrusts, that Nrisimha pierced and crumpled Hiranyakasipu (crystalline schists) from below, but frequently reached the surface of the earth, that Vāmana Vishṇu overflowed and interflowed the sedimentary beds (manu) and soared up to the highest heaven winged with Garuda, and that Rāma and Krishṇa alone were 'avatars' in the proper sense of the word operating mainly on the surface of the earth. Parasurāma was a comparatively

minor manifestation of Vishṇu. Varāha, Nrisimha, Trivikrama, Rāma and Krishṇa appropriate the Vishṇu temples, and I know of no temple to Matsya or Kūrma nor of any temple of note to Parasurāma.

CHAPTER IX.

THE LORD, APOLLO AND KRISHNA.

I HAVE already identified the Lord of the Old Testament with Vishṇu, and I will now establish the identity of Phœbus Apollo with Vishṇu. Latona produced Apollo in an island floating in the sea. This island known as Asteria became the famous Delos whose foundations, directly Apollo was born, became golden, and its circular crater-lake flowed golden lava. Apollo was led to Thera much as Indra was led by the Rishis. If this Thera is identical with the principal island in the Santorin group, then the proof of his volcanic character is complete. His sister Artemis visited the cyclops in the Lipari Islands. She found them at the anvils of Vulcan, *standing round* the red-hot mass. Latona took her to Vulcan who wished to present Artemis with natal gifts just as Twashṭar prepared 'Vahatu' for his daughter Saranyn when she was reborn in the heavenly region after abandoning her twin children Yama and Yami. The three cyclops, Arges, Steropes and Brontes, are patently the three volcanoes of the Lipari Islands, Vulcano, Lipari and Stromboli, of which the two former erupt rhyolite (Rudra) and the last basalt. It is

a marvel this did not strike western scholars. Apollo is golden as the golden sun. 'And ever hast thou eternal Fire, nor ever do ashes consume yesterday's coal.' 'Apollo is ever beauteous and ever young; never hath so much as a little down come upon the soft cheeks of Phœbus.' That is the difference between pure brilliant basalt which never gathers ashes and other lavas like Indra's whose brightness is almost immediately shrouded in ashes, who rise like warriors twirling their moustaches (Pra śmaśru dō-dhuvat). Vishṇu is a Yuvā (youth) and Kumāra (boy) according to the Vēdic Rishi. It is possible that the depilating of the chest of Brontes by Apollo's sister Artemis may refer to the conversion of rhyolite into basalt in Stromboli.

In Callimachus' hymn to Apollo I find that men were wont to measure out cities following Apollo, that Apollo himself laid their foundations, that when he was four years old, Apollo laid the foundations of Ortygia near the circular lake. Apollo gave walls to sovereigns. What kind of walls Apollo can give to sovereigns I will illustrate by an extract from Bonney.

'For instance, the historic hill of Gergovia where the old ramparts of rough stone can still be traced, owes its strength to the fact that it is an isolated fragment of one of these ancient basaltic flows. So great indeed is the *natural* strength of the fortress that in it Vercingetorix was able to repel the attacks of the army of Cæsar.'

Vishṇu's step-flows are the surest foundations to build upon and his dykes are the strongest of walls and ramparts. Apollo's lyre and his fertilising cattle on which he casts his eyes read strangely like Krishṇa's Vēnu (flute) and the fascinating influence he possessed over cows. Krishṇa destroyed the black serpent Kālīya who thrust his frozen snout into a pool of the Jumna even as Apollo destroyed the Python.

Of course, Apollo sits at the right hand of Jove as Vishṇu sat near Indra. Apollo was, of course, the only god who could be identified with the sun when his real identity was forgotten. When, unaided by steam or combustible, he filled and overflowed his circular pit with his golden lustrous lava illuminating the landscape, he was the sun on earth. The birth, wanderings and works of Apollo like those of Krishṇa cannot possibly be attributed to the sun, but then there was the consolation that Homer and Hesiod were fanciful silly savage children. Apollo in Greece was probably contemporaneous with Krishṇa in Northern India and with the Biblical Lord in Egypt and the sacred land of the Jews. Apollo had a sister Artemis born of Latona as Krishṇa had a sister Durga born of Yaṣoda. Durga preferred to live in and roam over the Vindhya mountains just as Artemis preferred the mountains for her home and cared not for cities. The Christ that the jews expect is the Kalki that the Brāhmans expect. The Jews rejected

the Christ just as the Brāhmans rejected Buddha, and the great central fact of religion is that three of the brainiest races of the old world, the Hebrews, the Greeks and the Brāhmans realised that Vishṇu was the Lord of this globe.

CHAPTER X.

YAGNA—HEROES AND WARS.

YAGNA is the preparation of the earth for the progress of vegetable, animal and human life by heating, softening, and melting the hard surface (hard with rock and ice), and the production of fertile soil and fertilising waters. Vāja-Sāti means the growth of soil or fertility. When the continental Vritra was broken up and Aditi was an endless succession of ridges and furrows covered by a chaos of erratics, stones and *débris* and cut up by a maze of lateral spurs and valleys in which smaller glaciers still found a home, the reclamation of the valleys for agriculture and human habitation was a task of stupendous difficulty far beyond the powers of mere human energy. Spots were selected where subterranean Savitar showed himself in warm springs (Ritus) and mud-volcanoes (Vājis). An Adhvara (firm platform) was erected in the midst of soft peat-moss (ūrna mradā barhih). The Adhvara was built round the vent or crossing fissures where Agni had revealed himself and from above, below and the sides, solid, liquid, and gaseous hydro-carbons were introduced into the hollow and Agni Hōtar (heater) was invited to occupy the

Adhvara. When lava rose through the fissure, libations of Sōma were poured into the Agni and the Hōtā became a 'Dūta' (messenger) carrying up the distilled and vapourised Sōma to the various gods through underground pathways and inviting them to come down, visit and strengthen the mortal (martya) cone that was being created in the lower regions. This is the significance of the Āpri hymns corresponding to the Afri Gan of the Avesta. The great gods, chiefly Indra, Mitra, Varuṇa and the Aśvins come down each from his own quarter propitiated and softened by the Sōma carried by Agni, the subterranean doors (dvāro dēvīh) open wide when they knock at them like Phœbus with beauteous feet, the bolts and bars fall back of their own accord and each god is welcomed (vīta) by special libations of Sōma. With the gods come underground streams from the region of the Rudras, Vasus, and Ādityas (Iḷā, Sarasvati, and Bhārati). The peat-moss which gathered hundreds of feet thick in the interglacial period is the 'Jaritā' which Agni and the gods distil and is itself a principal source of Sōma, and constitutes the pabulum out of which the new species of life are evolved. A great Adhvara on a comparatively high pass through which a great king-cone is raised by upthrows of scoria and ashes alternating with lava-flows and strengthened by dykes is a Vēradhvara or 'bird's platform,' Agni elevating himself like a bird on it. It is most important that the Brahman, he

who sits and blows steadily the Chchandas (CH_4, C_2H_2, C_2H_4) and Sāmans (higher series of the above gases) into the Agni, should never remit his activity, that the naphtha supplies from below should be regular and unfailing when the cone is being reared. What the elastic gases of Twashṭar are to the divine cones in heaven, the Vipra and Brāhmana is to the mortal cones in the lower regions. The king is therefore born of the Brahman, the Brahman blows him into shape even as Brihaspati, son of Twashṭar, blew into shape underground currents of lava from Indra, Varuṇa, Mitra, and Aryaman.

'Brahmanaspatir ētā samkarmāra *ivādhamat.*

Pra nūnam Brahmanaspatir mantram vadatyukthyam.

Yasmin Indrō Varunō Mitrō Aryamā Dēvā ōkamsi chakrirē.'

Sōma is crude petroleum. Indu is petroleum purified of dregs, Brahman is hydro-carbon gases produced by the distillation of Sōma, and Vipra or Brāhmaṇa is naphtha of various kinds condensed in the course of fractional distillation. The Prātassavana (morning-pressed) Gavāṣira represents the water-white series, the Mādhyandina (midday) Dadhyāṣira (curd-mixed), the viscous middle series, and the Sāyamsavana, the granular Astatki (Yavāsira). But verily, the full unfolding of the complicated technology of the Yajur Vēda will require a whole volume and much of it is still obscure

to me though I have a clear conception of its main outlines. The Brahman then operates on the conduit lavas through the crossing fissures (arani) and raises up the new king. If the Brahman is lazy or irregular in his own action, then either rocks overwhelm the Adhvara or a deformed king is born or a scoria throwing woman-fissure will result. Having raised the great cone and strengthened it with lava from the gods and naphtha from Brahmanaspati (and this is Prayāja), the Hōta is further fed with the fat of animals which it is desirable to multiply, and then come the supplemental supplies of Sōma (anuyāja) to enable the king to extend his kingdom. Such a cone in constant communication with the great gods in heaven through the Hōtar Agni within it, is a great king, destroys erratics, glaciers, moraines and rocks, breaks down mountain walls, letting in the sun, robes itself in snows and fertile ashes, spreads springs, streams and fertility all round, its bosom is guarded by subsidiary cones and fumaroles (Vīras and Naras) its subterranean and subaërial activity is regulated by reservoirs of naphtha (Vipras), and round its thighs and legs are born splendid trees, the finest breeds of cattle and the best food-crops, even as we find in Etna to-day. Such a king creates his own kingdom (lōka) by widening the rock-narrowed horizons and is well entitled to say, "I am the state.' The Hōtar frequently throws up several cones over a series of radiating fissures and one of these overpowers the rest and

rises above them. It would not do to have too many rival cones playing at dice, and Bhrātrivyas (rival cousins) are destroyed or suppressed, and the triumphant cone succeeds to the kingship. There were also wars between rival cones in different valleys helped by rival Rishis, and during these wars, the divine volcanoes were brought down by copious supplies of Sōma and the Rishi whose Sōma was most powerful and attractive secured the services of Indra, the rival king was annihilated and his kingdom added to the victor's. The later Rishi regrets that in his days there were too many kings warring or playing at dice (throwing up stones) while in the good old days there were great and mighty kings, few in number, like Yama, Manu, Kutsa, Āyu, round whose broad bosom men flourished in peace. The Lord in the Bible was a man of war and so was Indra in the Vēda. He pulled down one cone to-day and set up another. He joined one volcano and destroyed another. He raised up a fresh cone in the latter and then destroyed his old friend. He unsettled settlements, but all the same, as he was so wealthy and powerful and was profuse in his beneficence, scattering mineral and agricultural wealth without stint, asking only for Sōma in return, the Rishis had nothing but praise for him though they frequently grumbled against his inconstancy, partiality, prolonged inactivity and paroxysmal outbursts. This was the dread process by which our

ancestors in Thibet evolved settlements, agriculture and civilisation. No wonder the burden of their later literature was Svasti and Ṣānti (quiet and peace). It was in the course of these wars that Zarathustra and his Ātharvana Persians helped by Varuṇa were driven west by the Āngirasa Brahmans helped by Indra. The rivalry of Indra and Varuṇa appears on the face of many of the Indra, Varuṇa hymns in which the Rishi carefully balances their relative greatness. In the forty-second hymn of Vāmadēva (Mandala IV) that rivalry is put into their own mouths by the Rishi. Purukutsa, son of Durgaha, perished and his widow (crater-lake) prayed to the seven Vipras (seven-vented navagvas born of Angiras) to help her to produce a son by Indra and Varuṇa. Varuṇa describes his own greatness in two verses. Indra follows declaring he was greater than Varuṇa and that he raised volcanoes like Twashṭar himself, their common father. Varuṇa follows in the fourth verse by describing the support he gave to life and the heavens and the splendid streams he loosened. Indra follows bragging about his victories in war, how enemies equally matched always invoked *his help*, how he raised the dust of battle and how in the intoxication of Sōma nothing could obstruct him. The Rishis then praise and pacify Indra, the boisterous, and the lavas of Indra and Varuṇa jointly raised through Purukutsānī oiled by the seven Rishis, the mighty Trasadasyu, a half-god who destroyed

glaciers even like Indra. This story is typical of the birth of a great semi-divine hero-king and foreshadows the growing rivalry of the two great heaven-born volcanoes which resulted iu the worsted Ahurians identifying Indra and his friends the Asvins who distilled alcohol for him, with the devil and all evil, the Brāhmans making Asura a term of reproach in the Brāhmana literature, and the Ahurians wiping out of their sacred literature the very name of Varuṇa because the hated Brāhmanas continued to call and invoke him by that ancient name.

CHAPTER XI.

THE ORIGIN OF MAN.

VISHṆU laid the foundations, Twashṭar (imprisoned elastic gases) outlined the preliminary forms as Janis and Pastyas and Viṣvakarman (volcanic lava) absorbing waters and armed with steam power created the gods and fashioned the surface of the earth. Having destroyed Vritra and created the new race of living beings out of decayed beds of preglacial and interglacial organic matter, Viṣvakarman gifted the land (Bhūmi) to Kaṣyapa. During the glacial period Viṣvakarman was the Prajāpati. The growth of soil (Vāja-sāti) the flow of waters and the development of life depended solely upon him, helped to a certain extent by mid-day Pūshan. With his volcanic heat he regulated the seasons. Viṣvakarman gave our ancestors bumper crops of astonishingly quick growth, raised with a minimum of labour. They coated the surface with his fertile ashes, wetted it with streams produced by him and charged with his silt, and his underground heat forced up the growth of crops. His underground heat is as far superior to the sun's heat as his ashes are superior to the disintegrated rock-

dust produced by the sun and meteorological agencies. I quote from Johnston's Agricultural Chemistry:—

'Every gardener knows how much *bottom*-heat forces the growth especially of young plants; and wherever a natural warmth exists in the soil, independent of the sun, as in the neighbourhood of *volcanoes*, *there* it exhibits *the most exuberant fertility*.'

Who is this Kaşyapa Prajāpati to whom the virile Agni Prajāpati gifted the earth and the fruits of his yagna? Kaşyapa is literally the peeler, fragmenter or disintegrator. The Brāhmaṇa says 'Kaşyapa paşyako bhavati' (Kaşyapa is the gazer). Kaşyapa Prajāpati is therefore the sun. This was the far-off imperial husband to whom Viṣvakarman gifted his daughter the earth, and the beauteous children he had reared on her for propagation till the serpent returned to overwhelm her or she passed under the waters. The Bhūmi had known this Kaşyapa before. He merely gazed and withdrew his gaze. He pricked her with his far-travelled rays and chilled her by withdrawing them. Out of this alternate heating and chilling he produced the meteorological agencies which would wear out her beauteous frame painted in manifold colours, and denude and degrade her day after day. The mighty heaven-piercing gods she bore, the great earth-born heroes, the lovely Ribhus and the first generations of the new life produced on her and out of her by Agni would all perish, and her future

children would be born not of the hot embraces of a husband who made her rise, flush, quiver and swell with life and joy, but like worms out of the slow decay of her body on its way to its watery grave. Her beauty would be the beauty of decay and her children the children of decay. She shrank with all her soul from this dreary prospect and shuddered to think of a husband who, millennium after millennium, would glare at her by day, neglect her at night and return to see her beauteous skin cracked and shrivelled. She told her father and husband Viṣvakarman Prajāpati, 'O Viṣvakarman Bhauvana (born in volcanoes), I will rather go down under the waters at once and nullify your words of promise to Kaṣyapa.'

'Nimankshyēham salilasya madhyē.
Mōghas ta ēsha Kaṣyapāyāstu sangirah.'

It is a noteworthy fact that at the close of the glacial period the land did sink partially under the waters, the Bhūmi did attempt to drown herself. Verily the living species were not created by evolution under the influence of the distant sun. The sun, of course, is our mighty grandfather in the sky. Our great father in heaven, Viṣvakarman, as well as our Supreme Lord Vishṇu below are a bit of his body. From a distance, however, of 92 million miles *he cannot* create species. He can only maintain life and prolong it indefinitely through progressive decay till a great cataclysm overwhelms the species created by his son Viṣvakarman who is right below us, of whose body

we are made and whose energy inspires us. The creation of new species is by evolution spelt at definite intervals with an 'R,' Viṣvakarman raising the earth reduced to a dead level by Kaṣyapa, bursting over it in mighty storms of lava, inspiring the world of the dead (Pitris) with new life, and creating the new species out of the old. Pitris are his Pitu (food) and out of that food cooked into Ṣōma and Prishadājya he produces the newer races of living beings. *He* is the creator of species. There is good reason to believe that Āryan man was born round the sacred Mānassarōvar Lake by the action of Savitar Lava (Vaiṣvānara) born of Aditi, on the remnants of preglacial life.

In hymn 124 of the tenth mandala of the Riks, there is unmistakable proof of the decadence and depletion of Agni, Varuṇa and Ṣōma, and a re-advance of Vritra.

'Nir māyā u tyē asurā abhūvan.'

('Those Asuras lost their skill and power.') Agni shrinks into his Arani (source) powerless against the irresistible advance of Vritra. The great snow-streams, the daughters of mighty Varuṇa go up to their father and seek his protection from the adēva (ungodly) invader even as oppressed subjects appeal to their sovereign. Varuṇa makes a great effort, calls upon Sōma to rise and they would both destroy Vritra.

'Hanāva Vritram nirēhi Sōma.'

He rose even as Mount Erebus erupts, and

melted the snows but was only partially successful.

'Aprabhūtī Varunō Nirapassrijat.'

He loosened the waters only on a small scale. Then the Rishis sought out Indra 'Īndram nichikyuh kavay manīshā,' and Indra rose a second time and destroyed the glaciers. There is further evidence that the glaciers advanced twice before they were finally destroyed, once when Indra destroyed Viṣvarūpa, the first-born of Twashṭar and exhausted the great stores of petroleum accumulated in him and a second time when, in league with Suṣravas, the Zend Husrava, he destroyed Āyu, the son of Purūravas, Atithigva, the father of Divōdāsa, as well as Kutsa, his first and greatest friend. When these three great volcanoes were destroyed, Indra became powerless and Nahusha, who rose out of Āyu, became all-powerful and even attempted to flow into Indrāni and produce a cone on her. Attempting to force the pace of Agastya, the latter exploded him, Nahusha sank, was engulfed by Vritra, and became a serpent. Yayāti rose out of Nahusha and out of Yayāti the five cones of Yadu, Turvasa, Druhyu, Anu, and Pūru. When Indra re-asserted his supremacy and was born as a Vāsava, Yayāti became decrepit and partially subsided. The Rishis of Mandals were almost all of them contemporaries of Vāsava Indra whose re-birth after a thousand years of gestation out of his mother's mouth is described in the famous hymn of Vāmadēva.

The greatness of Nahusha and Yayāti was therefore carefully kept in the background by the Vēdic Rishis. The origin of Purūravas was in Savitar lava above the Manassarōvar Lake.

'Tvām Agnē puskarādadhi Atharvā niramanthata.'

(Atharva, O Agni, churned you out, above the lake.) Purūravas in conjunction with Urvaṣi the divine stream from Bṛihaddiva (the great heaven) produced Āyu. Urvaṣi was born of the snows of Mitra and Varuṇa as a travertine spring and after a stay of four years with Purūravas receded higher and higher up as springs in travertine terraces do. Yama and Manu were, of course, produced by Savitar lava as they were the children of Saranyu by Vivasvān the eighth Āditya. The races of Āryan man were born of these three volcanoes by the action of Savitar Agni on Sōma and Jaritas or decaying beds of preglacial and interglacial organic matter. Purūravas, Yama and Manu were the ancestors of the human race. The Ṣukla Yajus after describing in detail the production of king-cones, the distillation of petroleum, the processes of carving out glens and clearing them of erratics (dasyus), rocks (rakshas) and glaciers (Vritra), the preparation of the soil for agriculture, the raising of food-crops and cattle, and the beginnings of peace and civilisation under a king, lays down rules of conduct drawn from the fatherhood of god and declares in the simple downright language of

conviction ' Yōsāvāditye Purushah sōsāvaham. (Yonder lava in Āditya, I am He)' This Savitar Āditēya Vaiṣvānara I have already identified with the essence of basaltic lava which accumulated in the central crytallines (Brihaddiva) when Vishṇu took his third step into heaven winged with hydro-carbon vapours. This Āditya Sūrya was the source of mind-endowed man. Yama and Purūravas were born in the lowest longitudinal valley below the third heaven of Savitar in the descending order, and *above* the Vivasvān range, Manu was born in the inferior plateau below Visvasvān out of beds of unmixed sediment. Yama and Manu were the first-born, Purūravas being born later of Iḷa an oil-stream which had its source in Manu. The Persians who trace their descent from Vivanghant and Yima were the children of Savitar by Yama and their first settlements were on the Sutlej between Yama and Varuṇa, between Mount Kailas and the Rakastal Lake. To the east and on the Sarasvati were the first-born of Purūravas by Urvasi and in the south on the Sarayu (Karnali) were the children of Manu. The Krishṇa Yajus Saṁhita gives us an unmistakable clue to the period of greatest extension of the ice-sheet when it declares that when Āṣlesha (literally all-embracing) was the precessional star, Ahi or Sarpa was the presiding deity. This gives us between 8000 and 7000 B.C. as the period of greatest frigidity. Between 7000 and 6000 B.C. Brihaspati rose in splendour out of Aditi and helped the

reborn Indra to destroy the serpents. Tishya or Pushya was then the precessional star. Having regard to the commencement of the week in Āditya and the commencement of the year in Pushya (January) there is inherent probability that our ancestors intended to indicate that Āditya Savitar first created man when Pushya was the precessional star commencing the vernal equinox and year. The Gāyatri Mahā Mantra is a verse of Viṣvāmitra in adoration of Āditya Savitar. Though there are greater Savitars (creators) like Twashṭar and apām napāt, he is *the* Savitar to us men gifted with the mind. I have qualified man by the word āryan as the war of volcano and ice extended over nearly two-thirds of the northern hemisphere and man might have been produced simultaneously or at short intervals in the course of the conflict, in the Rockies of the United States, the Alps of Europe, and the Caucasus Range, as well as in the great table-land of Thibet.

The Biblical version that the Lord who 'rained down brimstone and fire out of the Lord in Heaven' produced Adam in the Euphrates valley, may be true and the Egyptians may have been born similarly and earlier and the question of the inscrutable Sphinx may refer to the origin of man. If the Sphinx is of volcanic origin, she carries the answer to the query on her inscrutable face in her own body. I may add that the chronology of the Vēda dealing with the creation and activity of Agni

Prajāpati is distinct from the chronology of the later literature. The main landmarks of the latter chronology are kalpas and manvantaras. The kalpa is the vast period between a universal submergence of the land under waters and its re-emergence out of the waters. This is a *night* in the history of the earth, and the Padma kalpa of the Purāṇas. Till the elevated Bhūmi sinks again under the waters is the *day* of Brahman, and we are now in the day known as Svēta Varāha Kalpa which commenced when Vishṇu raised up the white Padma from under the miocene seas and created the heavens and earths by his tangential thrusts. Manvantara is an *inter-sedimentary* period of which there are several in a *day* of the earth, periods of partial subsidence and re-elevation. Of course, there are no manvantaras in a night of the land when all the surface is under water. The special chronology of the Vēdas covering the interval between two glacial periods merges in Kaṣyapa's chronology when Agni hands over the land to Kaṣyapa and his work of sediment-creating by the slow process of denudation. I am unable to pursue the subject of Vēdic chronology further as my mathematical and astronomical knowledge is practically nil. I will only remark that when Aṣlēsha comes round to commence the vernal equinox the serpents will come back and the need for Agni Prajāpati. I will close this chapter by an illuminating extract from the great seer Ruskin, supreme alike in his grasp

of fundamental facts, minute details, and first principles.

'Was the world anciently in a more or less perfect state than it is now? Was it less or more fitted for the habitation of the human race? and are the changes which it is now undergoing favourable to that race or not? Is this the earth's prime into which we are born; or is it, with all its beauty, only the wreck of Paradise?'

'I cannot entangle the reader in the intricacy of the inquiries necessary for anything like a satisfactory solution of these questions. But, were he to engage in such inquiries, their result would be his strong conviction of the earth's having been brought from a state in which it was utterly uninhabitable into one fitted for man; of its having been, when first inhabitable, more beautiful than it is now; and of its gradually tending to still greater inferiority of aspect, and unfitness for abode.'

'In one sense and one only, the idea of a continuous order of things is admissible *in so far as the phenomena which introduced and those which are to terminate the existing dispensation may have been, and may in future be, nothing more than a gigantic development of agencies which are in continual operation around us.* The experience we possess of volcanic agency is not yet large enough to enable us to set limits to its force; and as we see rarity of subterraneous action generally proportioned to violence, *there may be appointed,*

in the natural order of things, convulsions to take place after certain epochs, on a scale which the human race has not yet lived long enough to witness. The soft silver cloud which writhes innocently on the crest of Vesuvius, rests there without intermission; but the fury which lays cities in sephulchres of lava bursts forth only after intervals of centuries; *and the still fiercer indignation of the greater volcanoes, which makes half the globe vibrate with earthquake and shrivels up whole kingdoms with flame*, is recorded only in the dim distances of history; so that it is not irrational to admit that there may yet be powers dormant, not destroyed, beneath the apparently calm surface of the earth, *whose date of rest is the endurance of the human race, and whose date of action must be that of its doom.* But whether such colossal agencies are indeed in the existing order of things or not, still the effective truth, for us, is one and the same. The earth, as a tormented and trembling ball, may have rolled in space for myriads of ages *before* humanity was formed from its dust; and as a devastated ruin it may continue to roll, when all that dust shall again have been mingled with ashes that never were warmed by life or polluted with sin. But for us the intelligible and substantial fact is that the earth has been brought, *by forces we know not of, into a form fitted for our habitation: on that form a gradual, but destructive, change is continually taking place, and the course of that change*

points clearly to a period when it will no more be fitted for the dwelling place of men.'

'It is therefore, not so much what these forms of the earth actually are, as what they are continually becoming, that we have to observe: nor is it possible thus to observe them *without an instinctive reference to the first state out of which they have been brought.* The existing torrent has dug its bed a thousand feet deep. But in what form was the mountain originally raised which gave the torrent its track and power? The existing precipice is wrought into towers and bastions by the perpetual fall of its fragments. In what form did it stand before a single fragment fell?'

'Yet to such questions, continually suggesting themselves, it is never possible to give a complete answer. For a certain distance, the past work of existing forces can be traced but there gradually the mist gathers, and the footsteps of more gigantic agencies are traceable in the darkness; and still, as we endeavour to penetrate farther and farther into departed time, *the thunder of the Almighty power sounds louder and louder*; and the clouds gather broader and more fearfully, until at last *the Sinai of the world is seen altogether upon a smoke, and the fence of its foot is reached, which none can break through.*'

CHAPTER XII.

Miscellaneous.

Rudra-Vishṇu.

When the Ādityas and Vasus (andesites and trachytes) passed into decadence, Vishṇu and Rudra (basalt and rhyolite) superseded them as the great gods. Rudra-Agni with his maruts (snows and snowstorms) was a dreaded god, the arch-enemy of yagna, cruel and destructive, while Vishṇu was the friend of yagna and life and the destroyer of Rākshasas and Daityas. But the later Rishis found that this Rudra had a deep-seated representative in Ṣiva, the white granite, a plutonic rock which swelled up with irresistible force to heights like Gourishankar and Kanchanjanga never attained by Vishṇu or Varuṇa, and rose out of foundations lower than Hiraṇyāksha and apparently from below the lowest depths of Vishṇu. This granitic form of Rudra, which was white and pure as the snows, was crowned by the highest snows of the globe and encircled by pure unsullied glaciers, was appropriately called Ṣiva. The rivalry of Rudra and Vishṇu was extended to Nārāyaṇa and Ṣiva (gabbro

and granite) and has been an unfortunate source of religious dissension in this distressful country. Nārāyaṇa is the seat of Brahman and this Brahman is no doubt hydrogen gas as the heaviest and most deep-seated gabbros as well as meteorites which have the same composition as gabbros are full of this lightest of all gases, and Nārāyaṇa literally means the home of Nāras or gases. The Smriti declares that the waters were born of Nāras contained in Vishṇu's primeval form. In the Gīta Krishṇa says—

'Ōmityēkāksharam Brahma Vyāharan Māmanusmaran'

[Pronouncing the one-lettered Brahma 'Ōm' and remembering me (its seat).] This one-lettered word 'Ōm' must therefore be hydrogen. All the hymns of the Rig Vēda, the song of creation, commence with 'Ōm,' the root of the earth Nārāyaṇa is full of hydrogen, the sun's chromosphere is full of the same gas and Twashṭar's fissuring power must be chiefly due to hydrogen, the Brahman (expansive gas) *par excellence*, and hydrogen produced the waters. Hydrogen was therefore in all probability the sound 'Ōm,' the unit of weight for the other Brahmans and the first word-god and the Holy Ghost of the New Testament. The heavens and earth are the first creation of the Old Testament just as the Dyāvā-pṛiṭhivī, the endless succession of ridge and furrow, was the first creation out of which the gods, heroes and mortals arose.

The heaven-tree.

In the great hymn 164 of blind Māmātēya Dīrghatamas, the sun in the sky and the Āditya Vaiṣvānara sun are said to embrace the same tree and this tree is the sweet Pippala. According to the Kaṭha Vallis the roots of this Pippala or Asvatha tree are above and the branches slope down from the root at the top.

'Urdhva mūlō avāṇ ṣākhah ēshoṣvathah sanātanah.'

In the same hymn of blind old Dīrghatamas, who probably possessed the most powerful intellect with which Agni-Vaiṣvānara inspired the human race, it is declared that this tree which the sweet-eating birds enter creating the all-gods, bears its fruit at the top and that those who do not know the 'father' have no idea of it. The father is, of course, Dyāvā and the tree is therefore the great mountain range crowned with sweet ice-fruits which the sun in the sky merely gazes on, but which the Vaiṣvānara sun penetrates generating the Ādityas, Vasus and Rudras who are the Viṣvē Dēvas. I once believed that the word Bhūdhara applied to mountains was wrong, but it is literally true that the mountains carry on their subterranean feet, the contemptible diluvium on which we dwell and the central granites not only tower above the plains and hills but actually support them from below. The great central ranges with their innumerable spurs branching down on all sides are therefore

correctly compared to a Peepal tree with its hard granite root bearing sweet ice-fruits at the top.

The Car-festival.

The car-festival represents the slow flow of a lava-current in a prepared track above the settlements created at the base of a volcano. *Utsava* is the sub-aërial flow of lava *over*flowing the top of the cone with attendant thunders, lightnings and earthquakes represented in a car-festival by gun-firing rockets and fireworks. Each householder offers Sōma represented by cocoanuts to the slow-moving car which stops before each house like Jupiter Stator for motor power, and is rewarded by fertile ashes (vibhūti). Prasava is underground flow of the Mūla Vigraha raising up new cones at a distance or lodes and veins of mineral wealth. So far as the 'Jagat' (the world of life) is concerned it is comprised in Agni and Sōma, the lava furnishing the inorganic constituents of the soil and Sōma the organic humus. The gods supply (isha) agricultural clay which is gōmat (containing lime) and asvāvat (loamy), barhis (peat-moss soft as wool) supplies the humus and between lava and peat-moss the old Rishis manufactured the food of man and beast. The ceremonies attendant on birth and death, the Agni-hōtra at home, the car-festival in the streets, in fact everything that an orthodox Brahman does from birth to death is founded on the analogy and experiences of his ancient surroundings created by the dynamic

energy of subterranean fire. Marriage and childbirth are identified with the union of Agni with a warm spring rising out of an underground stream, a stream which had known Sōma and Gandharva in its course, had passed through beds of petroleum and had been arrested, heated and charged with sulphurous and hydro-carbon gases by salses in the Rajas region. Addressing Savitar, the Rishi says :—

'Asmabhyam tad divō adbhyah priṭhivyāh Tvayā dattam kāmyam rādha āgāt.'

(That lovable gift of yours created out of the snows of heaven has come to us through the Priṭhivī.) A snow bed that melts under the influence of Vaiṣvānara Sūrya, sinks into porous lava-flows and ashes and issues after contact with Sōma and Gandharva as a warm spring in the Priṭhivī is a Sūryā daughter of Āditya Sūrya. The primary meaning of Sūryā is iridescence. The rainbow in watery vapour and the iridescence of petroleum floating on waters are both daughters of the sun. The bubbles of hydro-carbon gases that gather like bees over honey are also iridescent. When Agni Hōtar marries such a spring, a Vīra (warrior-cone), is the result. When a Rishi (crude petroleum in sedimentary beds), marries such a spring in the Priṭhivī Viprās or Brāhmans and Vājins (fertilising cones of mixed mud and naphtha, corresponding to the Gandharvas in the upper region) are produced and the spring becomes a Brahmā. (Strī hi Brahmā babhūvitha.) When lava from a cone attempts

to penetrate a spring through which pure naphtha (Vipra) is produced out of the Rishi below, it constitutes the defilement of a Brāhman woman by a Kshatriya. A Vipra is a Vipaścit (flashing with purified life), 'Vipanyu' (becoming valuable by distillation), and Brahmaṇaspati was a mighty stretch of such distilled naphtha and Sāmans of all kinds, rising through innumerable siliceous and travertine springs and streams, the Gnas of Twashṭar as well as the Viśvarūpa cow of the Ribhus. Of these Sāmans, the Brihat Sāman (benzine series) that supported the sovereignty of the gods predominated in Brahmaṇaspati, and he was therefore called also Brihaspati (the Vināyaka of later literature.)

These springs and underground streams are Brihaspati's wife which king Sōma (crude petroleum) defiled and diverted from the seat or Brahmaṇaspati. Brihaspati (whose sources were the primary fissures over which the gods rose) when he was dissociated from the springs and streams that cooled and purified him, developed heat (tapas) and explosive power dangerous to the gods, till his wife was restored to him. A suppressed solitary Rishi sulking in caverns develops dangerous heat and explosive power; he can shake the earth and destroy creation till he is wedded to springs and streams. He is a tapō-dhana. His wealth is heat and the gods deprived him of his 'tapas' by sending beauteous dancing girls of divine origin, playing fountains having their origin in snow. The art of dancing was evolved

out of the graceful play of iridescent snow streams and springs, which rise and fall, spread and contract, advance and recede with the varying power of the sun, and are frosted and prostrated by his neglect. With Vaiṣvānara Sūrya or lava as the inspirer of the snow, the evolutions were infinitely varied and supremely fascinating. No wonder the supreme goal of the lover of beauty was the great hall of Indra where Vānis and Apsarasas danced and sang. The seven Vānis of the Rig Vēda are seven sporting fountains, which rose out of the seven mouths of Brihaspati and formed the main source of the Sarasvati or Brahmaputra. The fountains were charged with Twashṭar's Sāmans embodied in Brihaspati and Sarasvati was therefore the embodiment of song and virility and flowing in a succession of pools (saras) with a mixture of melted snow and naphtha, Agni produced many a mighty volcano like Divōdāsa on her. The science of music was evolved from the gaseous emanations of petroleum. The flashing bursting bubbles Riks and Gīh being represented by the Tambūr, the monotonous stōmas by the bagpipe, the Sāman by the musical cadences of the vīna and the voice swelling under pressure; and the Uktha (explosions) by the drum accompaniment. Rishis and Brāhmans are the great singers as they are of the essence of petroleum and dancing girls like the Vānis born of Brahman are sweet singers, though their power and range are limited.

Playing at dice, the primeval form of gambling, is peculiar to Kshatriyas and represents the progress of Yātu-throwing by a number of cones born of the same cross-fissure, which results in the mastery and absorption of the brother-cones by the conquering cone. The form of the contending pieces is conical. The two cross-pieces constituting the board are the crossing fissures, the various cones move about to the upthrow of the dice till one cone is firmly established in the centre. So in the Riks there is a reference to 34 warriors of whom seven rose from the south, eight from the north, nine in the west and ten in the east who played at dice and of whom one well-fashioned cone out of the ten in the east was raised up into the king-cone. This probably refers to the birth of Indra as Vāsava as in another place Indra is said to glare all round with his 34 eyes. The Rishis protest with all their soul against multiple cones creating confusion and misery by constant stone-throws, and advise the minor cones to plough the ground in preference to playing at dice.

'Akshair mā dīvya krishim it krishadhvam.'

Architecture.

The art of architecture was evolved by study and imitation of the works of Viṣvakarman and Vishṇu. In later literature whenever a Bhavana carved by Viṣvakarman is mentioned (nirmitam Viṣvakarmaṇā) the reference is to a volcano, and volcanoes and basaltic dykes taught them to build the great monuments of architecture.

Sovereignty.

I have already explained how the principles of sovereignty and social order were evolved from the work of a great volcano with its powers to destroy the enemies of life, to create fertility and wealth and to support life, and its numerous minor cones and springs of water and naphtha.

War.

There was no better school to learn the art of war than the stupendous magnificent wars of volcano and glacier and of volcano with volcano allied with the splendid Maruts and explosive Sōma and Vāyu. The evolution of the arts of civilisation including religion and temple-worship from the primeval operation of tectonic creative forces is a fascinating subject of study which I cannot pursue into its details.

Machinery.

Sōma being a necessity of life in the glacial period, the Rishis developed machinery of a primitive kind, but exactly similar to modern tools employed in boring for and finding petroleum. Hymns 76 and 94 of the tenth mandala deal with this subject. They first excavated trenches and wells by hand-digging in Brahmaṇaspati.

'Tubhyam khātā avatā adri dugdhā.
Madvas-chyōtantyabhitō virapṣam.'
(Wells dug out of you and milked through

porous rock shoot forth sweet streams of naphtha.) In the hymns above referred to they appear to have invented drilling with derricks, rigid rods and free fall bits, the bit being crystalline granitic quartz of the compact crystallines. These latter, the fathers of the boring Grāvā, are laid to stand firm (Dhruva-kshēma) century after century (yugē yugē). The Grāvā (identical with gravel), is compacted Adri (sandstone) and is said to be tireless and to scratch everything, while it cannot be scratched. The bits prick the mother (earth), make the Pṛithivī reverberate with their noise, discover the Madhu, taste the Sōma before the Hōta (lava), require no food, treat Indra's Sōma-distilling steam-horses with contempt, raise a shout of joy when the Adhavra is expressed (when the oil-stone is reached) by the process of pricking and pinching the mother like playful children, and return to the surface after performing their great work of tapping the deep-seated stores of petroleum. I am not sure if by Drughana in the Mudgalāni hymn (Mandala X, Hymn 100) the Rishis refer to the sand pump, though there can be no doubt that in hymns 76 and 94 of the same mandala they refer to drilling-bits with which they bored for and found underground stores of petroleum below platforms in which it was intended to invite Hōtar Agni and Indra, the lucky but unselfish and beneficent Grāvās enjoying the deep-seated Havis even before the Hōta (Hōtuschit purvē haviradyam ānaṣuh), though they consumed no

drop of the divine food which they discover and munch (na minanti bapsatah). The distinction between 'Upabdi' (subterranean sounds) when boring through rock and *débris*, and the Adhivāk (shouting up) when the final tough bit of rock is broken through and the soft Sōma-stone or sand is reached, should be carefully noted.

Ulūka and Kapōta.

Ulūka and Kapōta are the two messengers of Yama, of death, ruin and subsidence. When the Ulūka screeches and the Kapōta sits above the fire-place, these are signs of the disintegration of a volcano's frame and the forerunners of its dissolution. They are also signs of approaching death to man fashioned after a volcano. The Ulūka is the owl. Shakespeare has it:—

'And the scritch-owl scritching loud
Puts the wretch that lies in woe
In remembrance of a shroud.'

What is 'the Kapōta'? A great injustice has been done to the innocent beauteous dove, the bird of love by identifying it with Kapōta, the messenger of death. Of course, Kapōta is the hoot-owl. The dove is the Parāvata (Pārivāla in Kanarese and Parā in Tamil) and not Kapōta, which is the Goobay of Kanarese and Koṭṭan of Tamil. This was brought home to me when, in answer to a plea of interruption of adverse possession, it was explained that the house in dispute was temporarily vacated as a Goobay sat over the chimney. It is hardly

needful to add that the hoot-owl is of the same genus as the screech-owl and even more frightful in appearance and is therefore fitly associated with the latter as a messenger of death. When these birds find warm hollows in a martya cone, it is a sign that the cone is weakening, that its frail sides are breaking up and that it begins to stink of sulphuretted hydrogen and mephitic vapours like the foul dying breath of a decayed human being.

The Kashmir Valley.

In the great work of Kalhaṇa called Rājatarangiṇi, Kashmir is said to have been formed out of a great lake known as Satisaras which was once occupied by a water-born monster (Jalōdbhava) and that Kaṣyapa with the help of Brahma, Vishṇu and Mahēndra destroyed the monster and carved the lake into the Kashmir mandala. This shows that the great Kalhaṇa had an accurate conception of the great outstanding facts of the Rig Vēda.

Kālidāsa and His Himālayan Hunters.

In his immortal Kumārasambhava Kālidāsa, the greatest of later poets, when describing the Himālayan range 'stretching like earth's own measuring rod from sea to sea,' asserts that it is the home of mighty hunters who track elephant-killing lions by the pearls dropped from the hollows of their nails, though the trail of blood-marks is wiped out by the melting of the snow and lost. The sapient

commentary is that these pearls were native to the foreheads of elephants, that in the good old days elephants distilled and secreted pearls in their heads, and that these pearls stuck under the lions' nails when they tore out the elephants' heads. I was reading a book of travels, the "Trans-Himalaya," and the following passage in it reminded me at once of Kālidāsa's truth to nature :—

'The jagged mountains to the south reminded me of a squadron of armoured vessels at gunnery practice in rainy weather. The valley was about six miles broad. Towards the east the snow lay less thickly *and finally only the foot-prints of wild animals were filled with snow like a string of pearls in the dark ground.*'

Svarbhānu.

In hymn 40 of the fifth mandala of the Riks is a description of Svarbhānu and the darkness he spread which devoured the sun. This was no doubt the inky column of steam and fine rock-dust born of the Asura (Vāyu) like a great banner of the sky which sent down branches into the middle region and valleys like the Vesuvian stone-pine and enveloped everything including the heavenly volcanoes in pitchy blackness. Atri rising through Mitra and Varuṇa winged with the fourth Brahman (hydrogen) dissipated the fine blackening stupefying dust and restored to us the eye of Heaven, the sun.

Surā.

This word representing alcohol occurs only in one hymn of the first and tenth mandalas (Hymns 166 & 131). The Aṣvins or Nāsatyas manufactured methyl alcohol for Indra when he fought Namuchi, which filled the pass leading from Aditi to the mānava region through the Vivasvān range south of the Mānassarōvar lake. The Aṣvins normally erupted hot water or rose in mighty sky-piercing columns of pure steam which first iridised the rays of the sun long before he rose and this iridescence I have already identified with Sūryā, the daughter of the sun. The Aṣvins sometimes erupted streams of mud, but chiefly they wheeled round the slopes of the heavens, and mid-region, warming and melting everything their vapourous columns touched, and distilling Sōma out of shales and sandstones. Their underground activity was supremely beneficent. They are now represented by the hot springs in the ridge between the two shrunken lakes below the Kailās. They raised up many a submerged Rishi, distilled many beds of coal and petroleum, gave rise to multitudinous mineral springs, hot, lukewarm and cold, charged with borax and other medicinal salts and distilled numerous varieties of naphtha and were thus famous doctors of medicine. They sometimes produced poisonous mephitic vapours and destroyed the fish in the lakes.

'Jātam vishvācho ahatam vishēna.'

'Jātam' is genus. These Aşvins were the chief friends of Indra in his days of mild and regular activity when the two steam steeds of the Ribhus dragged his car. They distilled methylated spirits out of the pinewood engulfed by Namuchi and this surā was even more helpful to Indra than Sōma for destructive work on erratics and moraines. With the help of surā and Sōma Indra penetrated the nêvê beds feeding Namuchi and raised such a swell of boiling foam that the head of the Namuchi glacier clean turned round and Namuchi, who till then could not be dislodged from the Dēvayāna pass, was destroyed once for all. Surā is dealt with in detail in the Şukla Yajus, but I will quote only one mantra from the Vājasanēya samhita in proof of its identity, position and nature.

'Nānā hi vām Dēvahitam sadah kritam
Mā samsrikshāthām paramē vyōmani
Surā tvam asi şushminī Sōma ēsha
Mā mā himsīh svām yōnim āvişanti.'

The Rishis had experience of the terrific explosive power of a mixture of alcohol and petroleum and addressing them they prayed:—

'Differently have seats placed in Gods been made for you. Don't commingle in the deep subterranean fissures. You are the very energetic surā, and this is Sōma. Do not injure by entering your own source.'

Sōma is the source of surā. Twashṭar's Sōma produced surā, too, in contact with water and organic sediments. The great Vişvarūpa

erupted surā by one of his three mouths. It was because Indra and the eastern gods absorbed fiery surā they were known as surās in the later literature of the Brāhmans. The manufacture of intoxicating spirits as part of their ritual probably led to the Ṣukla Yajus Brāhmans of the Mādhyandinīya branch to be regarded as Pariahs at midday time when they distilled surā with viscous Sōma for Indra, to whom the midday distillation is solely appropriated. As Indra, the embodiment of beneficent and victorious sovereignty became paroxysmal and destructive under the influence of surā and Sōma, alcohol and petroleum were prohibited to kings as the addition of intoxicating spirits to the intoxication of power and position spelt a fierce explosive oppressor to the subjects. The wise old Brāhmans of the Aitarēya Brāhmaṇa substituted for inflammatory Sōma and its worse derivative alcohol, a mixture of the virile juices of the fruits and aërial roots of the Aswatha, Nyagrōdha, Udumbara and Plaksha as the invigorating draught preliminary to his ascent of the throne corresponding to Twashṭar's Sōma which first raised Indra to the top of his brilliant cone. These trees belong to the genus Ficus and are respectively the species known as Religiosa, Benghalensis, Glomerata, and Infectoria. In Peary's North Pole expedition petroleum formed one of the items of the daily dietary of the brave party led by the great explorer through the Arctic ice.

CHAPTER XIII.

THE RIKS, THEIR PRESERVATION AND INTERPRETATION.

THE Riks and the supplemental samhitas, chiefly the Ṣukla Yajus, possess practical and absorbing interest to the human race as a record by our ancestors of their origin and of their fierce struggle for existence at a critical juncture in the history of the human race. The care with which the hymns have been preserved has no precedent in human history. Hundreds of generations of Brāhmans spent their boyhood and youth in committing these hymns to memory and hundreds of generations of kings considered it their primary duty to perpetuate the hymns by bestowing their highest honours and their most lasting and substantial benefactions on the Ṣrōtriyas in whom the intellect was practically reduced to memory, who chanted hymns which neither they nor their pious enraptured listeners understood. The Agrahārams or the best lands of a village were gifted to Agnihōtris who repeated the Vēdas and not to experts in logic, grammar or philosophy. Ṣrōtriya became a bye-word of contempt among the worldly, and passionate, ambitious Droupadi told her husband Yudhishthira:—

'O King, your intellect, like that of a Śrōtriya Brāhman who does not know what is feasible and what is not, stifled by an unbroken chain of constant recitation, does not see the inner truth of things.'

With all this, even Śūdra kings like Māgadi Kempēgowda, the famous founder of Bangalore, were as beneficent to Śrōtriyas as the blue-blooded Kshatriyas. The Brāhmans and learned Kshatriyas knew they could not understand the mantras. They did not pretend to understand the Riks and did not establish schools in which the meaning of the Vēdas was taught. Why then did they lavish so much care and motherly love on these Samhitas? It was not solely because it was a record of the origin of the human race. Not merely because it was a record of the mighty struggle of stupendous forces by which our ancestors were confronted which they had to face, study, combat and regulate on pain of extinction, individual and racial. It was because they knew that when the twenty-seven precessional stars went their round, when they completed their cycle of over twenty-five milleniums, when Āślēsha once again commenced the vernal equinox, the serpents will once more coil round the mountains and invade the plains, and once more Kaśyapa Prajāpati will be impotent and Viśvakarman or Agni Prajāpati will supersede him and take out of his enfeebled hands the regulation of the seasons and the propagation of the species. An accurate

record of the history of the glacial period and of the yagnams which prepared the crust for human habitation and enabled the human species to survive, was a *sine qua non* of the future survival of the human race, of the divine mind of man, the light of lights which roamed through eternity and immensity. The difficulty of interpreting the Riks is twofold; one inherent in the Riks themselves and the other in modern man and his inherited prejudices. The Rishis had only one language to draw upon when they were threatened and confounded by novel and dreadful phenomena. They had just begun to develop the elements of civilisation and social order in Yama and Manu. They had neither time, leisure nor facilities to invent a new technology of strange words like the modern scientist whose jargon is a babel of more tongues than Babylon knew, and they threw their experiences into hymns drawing upon their normal domestic and natural surroundings and feelings for appropriate analogies in the hope that when next the great danger threatened, their distant posterity, their far-off children would realise descriptions based on the universal needs, surroundings and feelings of the human race. Thus 'aṣva' horse is used for horse power as it is to-day. 'Go' and 'Dhēnu' are used for anything that has to be milked or swells and oozes at intervals like the udder of a cow; for cows, snows, nêvê, viscous and crude petroleum, for lime in soils, and for springs and streams

of all kinds which overflow and subside at intervals. 'Aşva' is light liquid petroleum as well as horse power, generally, and is also fertilising silt, while 'Arvat' or race horse is a cataracting river with its burden of mountain silt. 'Arvadbhir vājam sanitā.' I have already interpreted the wolf spread by Gods, the bitch Saramā that went in advance of Indra, the dogs born of this bitch, the goats drawing Pūshan, and the one-footed goat which is the neck of the ice-serpent. The later Purāṇas followed the Vēdas faithfully. Vishṇu was Dāmōdara as he sent forth ropy lava which American Geology calls 'Pahoehoe' out of his abdomen exactly similar to the intestinal convolutions. Vishṇu was Padmanābha as the great nummulitic beds of Brahman under the Eocene seas emerged and gathered round his navel like a white lotus before they hardened into the miocene fish. This period of his sleep in the endless waters is the Padma Kalpa which preceded the Vārāha and Vishṇu is then Ananta Padmanābha. The first difficulty in interpreting the Riks is therefore due to poverty of language and the user it involved of words with a familiar meaning for more than one unfamiliar object. The other difficulty is incidental to the change in human surroundings, the environment of the Vēdic Rishis being so different from that of their successors. This difficulty is therefore common to modern scholars as well as comparatively ancient scholars who flourished after the

special conditions which called forth the Vēdic hymns, the Greek myths, the Zend Avesta and the Old Testament had passed away. Further, in the transition period between the rule of Agni Prajāpati and Kaşyapa Prajāpati and as a punishment, as the old Rishis might say, for the earth's contumacious conduct in refusing to wed Kaşyapa, Viṣvakarman animated Dānavas, Atrins, Rākshasas and Daityas who worried the gods, their mother Aditi and the world of life till peace was finally restored and the Bhūmi who threatened to drown herself finally reconciled herself to her new lot by the efforts of a mightier power than Viṣvakarman, the Almighty Vishṇu. Max Müller desperately but truly opines that all mankind were mad at a certain stage of their existence. No wonder they were mad when Father Viṣvakarman who made them and saved them from the serpent turned into a Kravyād, made the earth fissure like jelly and tremble like a Peepul leaf, rose through slates, glaciers and hard rocks and overwhelmed the earth with rocks and floods, dust, darkness and poisonous emanations. This war of the Ādityas and subsidiary gods with rock-throwing volcanoes immediately below them is the second war in heaven of the Bible, the first war being the war of God with the Dragon enshrined in the Masai legend. The cherubs are snows and seraphs are fiery flaming jets of hydro-carbon gases corresponding to the Gandharvas of the Vēda. This war of terror, flight and confusion,

cutting, wounding and mangling, of seas receding and overflowing in quick succession, of earthquakes and gaping fissures, drove the earth and the human race she bore to Viṣvakarman mad, and when finally by Vishṇu's might and grace Viṣvakarman withdrew into his lair and Kaṣyapa was firmly established as the Lord of Creation, a great pæon of thankfulness arose, the maddened men prayed for peace and comfort (Svasti and ṣēvadhi) and their song was as the song of the lotus-eaters of Tennyson. They recoiled in terror and disgust from the latest exhibitions of the Lord, forgot the glaciers, volcanoes and explosive Sōma as an ugly dream and hailed the sun and his rain-cloud as the new gods of light and life. Viṣvakarman was a mighty poet, his creations were mighty and magnificent, his wars were on a stupendous scale and his metamorphoses were sudden, striking, and splendid. Kaṣyapa too is a poet with his pretty carvings, slow transformations and petty wars amid general peace. The great poets who dealt with the tectonic god and the wars and fortunes of his powerful brood, poets like Homer, Virgil, Dante, Milton, Vālmīki and Kālidāsa are necessarily the greatest poets of all time. Viṣvakarman inspired the energy, physical and mental, of our ancestors which decays under Kaṣyapa's rule even as the earth which Agni lifted up and carved in relief into many a figure strange, sweet and of unspeakable power and beauty, gets degraded day by day

and decays under the pin-pricks of the sun. The Samhitas and supplemental Brāhmaṇas were preserved to prevent the extinction of the human type when next Viṣvakarman creates new species out of the coming confusion and hotch-potch, out of the existing species overwhelmed by glaciers and glacial *débris*.

CHAPTER XIV.

THE HUMAN MIND, ITS ORIGIN.

I HAVE already stated that man was born of Savitar Āditya lava, that this lava was the essence of Vishṇu in the central crystallines deposited by his third Vikrama in the highest heaven. Man was made in the image of a volcano (god) and of the Brahmāṇda (the globular earth). At the surface of the earth the energy of the lava which is pure 'chaitanya' (living intellect) deteriorates into and develops heat, light, electricity and mechanical force as well as forms of matter known as liquid, solid and gaseous (Rita, Satya and Brahman). This is what is meant by

'Dēvānām Praṭhamē yugē asatas sadajāyata.'

During the first generation of the gods the material was born of the non-material. This is the becoming out of nothing of the Maoris. The forms, qualities and energies exhibited by the lava on the surface cannot be predicated of the deep-seated magma under stupendous pressure below the earth's crust. In the centre of the human head is the intellect. In the centre of the highest crystalline mountains was Savitar lava instinct with intellect representing the convolu-

tions of the brain, their form, colour and energy. When the intellect flows out through the seven holes at the surface of the head, it degenerates into the senses. The central brain is the source of all sensation, but has no sensation itself. Similarly Savitar Agni and the central Vishṇu, its source, which break through the circumference of the heaven and the globe as solid, liquid and gaseous matter attended by heat and mechanical force (tacto-muscularity) explosions (sound) and light (sight) has no sensation and is pure living intellect or chaitanya. The analogy between the globe, the human head, and a Savitar volcano in high heaven is thus complete. As the poet has it, the new-born child comes as a trailing cloud of glory from God, its home; the soft boneless integument-covered vent at the top of its head represents the Araṇi of a Savitar-cone and the child realises its source, its identity with the supreme chaitanya, so long as this vent is not closed by the growth of bony matter. The Brāhmans believe that a good selfless man devoted to God re-attains a knowledge of God and of his identity with the Supreme Spirit, that this divine process is attended by a re-softening of the top of his head by the efforts of the individualised spirit within to merge in the Supreme Spirit. The central crystallines are the head of the earth and Savitar lava the brain. As the self-born intellect in the centre expanded from the centre to the circumference, bored the holes of the senses, flowed out in

sensory forms and created man in His own image, man looks 'without' for the truth, though the true self is within and can be known only by introspection. The source of the earth is not on the crust, but within the crust, commencing in the interior of the top of the crust as Savitar lava. The Upanishads deal, as their name literally means, with 'what is seated under within.' The great Upanishad has it

'Parānchi khāni vyatriṇat svayambhūh
Tasmāt parān paśyati nāntarātman
Kaśchid dhīrah pratyagātmānam aichchat
Āvritta chakshur amritatvam ichchan.'

(The self-born bored holes away from the centre and hence one looks outwardly and not within himself; some strong soul desiring immortality and turning his eye into himself longed for the inner self.)

'Kham' is literally a *hole*. As the Aṭharvana has it

'Kas sapta khāni vitatarda Śīrshaṇi
Karṇāvimau, nāsikē chakshaṇī mukham.'

(Who bored these seven holes in the head, the ears, the noses, eyes and mouth?) The 'who' of course is Prajāpati who is Agni Prajāpati and not Kaśyapa Prajāpati. The Hebrew Prophets, the ancient Greeks and the Hindu Rishis and Munis learnt by experience that the energy of the Lord, of Apollo and of Vishṇu within a short distance of the brilliant surface which has a temperature of 2500° was chaitanya or intellectual energy and that proximity to Vishṇu, the Lord and Apollo who

degenerate into inferior forms of matter and energy at the surface inspired the human mind with a knowledge of the past, present and future. Moses again and again impresses on his contumacious followers the great miracle of his inspiration by the Living Lord on Mount Sinai; the Greeks had absolute faith in the Oracle at Delphi, under which was the eternal golden Fire of Apollo; Vishṇu in all ages inspired the Hindu seers and Mārkaṇḍēya, the beauteous, eternal and ever-young Muni, asserted as a matter of fact that the great Nārāyaṇa under the Eocene seas who glowed like the sun out of the top-leaf of the subaqueous nummulitic banyan tree was no other than Yudhishṭhira's dark-blue cousin Krishṇa. Of the living forms of Vishṇu, the pure blue basalt was nearest the central Vishṇu. Bālakrishṇa sparkled, coruscated, and dazzled with chaitanya and maddened with intellectual ecstasy and expansive individuality (Love) the world of life blessed by his sālōkya and sāyujya (proximity and contact); youthful Krishṇa, more worldly and of less purity, gave out the immortal Gīta; while, omniform Krishṇa after close association in the Mahā Bhārata war with Trachyte Arjuna and inferior magmas had but a faint perception of the eternal truth of things and declares his decadence to Arjuna before chanting the inferior Anugīta. Chrysolitic Rāma after the war with Rāvaṇa forgot his identity with Vishṇu and believed he was an individual entity sprung of Daṣaraṭha. As

already remarked, the Lord, Apollo, and Krishṇa were in all probability contemporaries. So long as the Living Lord gratified the mind, heart, and senses of man there was no need for symbols of the Lord. But when the Lord finally disappeared under the earth, man sought out and cherished his representatives especially specimens of those lasting deep-seated plutonic forms which best typified his might and beneficence and of which the mighty floods of lava were but the sweat and vesiculated overflow. This is the origin of stone worship. Nārāyaṇa, Varāha and Nrisimha are the chief Vishṇu stones. The word 'Mūrti' is added to show that they are material forms of the ancient Lords of Life. Here again Ṣiva disputed Vishṇu's supremacy. The old Rishis knew of Ṣiva only as the firmest and most elevated constituent of Father Heaven through which the gods rose and Vishṇu thrust his uplifted foot (Uttāna pāda) in his Trivikrama. The origin of the Ganges in the snows of the central Himālayan granite pierced by intrusive basalt gave rise to the Purāṇic story of her birth in the foot of Vishṇu as well as in the head of Ṣiva and her entanglement and disappearance in the hoary matted hair of Ṣiva in the snowy heavens. The later Brāhmaṇas found that this granite, pure and white as the eternal snows which clothed it, was plutonic and intrusive, a symbol of eternal persistence, as well as steady and irresistible force. They traced it to the lowest depths of the crust and saw it

swell and raise the highest ridges of the Himālaya to heights they had not known in the heavens of the firmament (Aditi). With intrusive granite was intimately associated intrusive quartz and they found further proofs of his ancient activity æon after æon in the sharp rows of jagged teeth standing out of metamorphic rocks as symbols of the terrific energy which pierced and tore mile after mile through the upper foundations of the earth. This intrusive granite they called Bhairava and intrusive quartz which pierced even through Nrisimha (porphyry) they designated Ṣarabha. Great ascetics and munis who retired to the region of the snows and came in contact with the living Ṣiva were thrown into a state of trance and the mighty energy of Ṣiva induced in them a sensation of omnipresence, omniscience and omnipotence and they experienced a feeling of ecstatic bliss and beatitude to which all the joys of individual life were as nothing. Intrusive granite and quartz became the rivals of the Vishṇu stones even as Ṣiva became the rival of Nārāyaṇa. A svayambhu (self-born) Linga or Mūrti is always a laccolite or intrusive and gathers devotees round it who build a temple over it after the models left by Viṣvakarman. I am indebted to an interesting book written to demolish Brāhmanical beliefs for the information that the great Linga of the Tribhuvanēṣvara in Cuttack is a large *uncarved* block of granite partly buried in the ground

partly apparent above the soil to a height of 8 inches,' and that this block 'is believed to be a Linga of the svayambhū class pervaded by their own nature by the essence of the deity.' The central granites were in Vēdic times the Dyāvā, the Father in whom the three kinds of volcanoes Ādityas, Rudras and Vasūs were born. The Father of the three kinds of Volcanoes (Tribhuvana) was recognised as their Lord or Īṣvara when the true nature of granite was discovered by our ancestors who migrated from Thibet into the Himālayan valleys. This worship of representative stones was not materialism; it was a help to human memory to remember and realise the great works the Lord had wrought in the far-off ages for the progress of life on earth, a progress which culminated in the implanting of His own Divine mind in the frail human frame. Such worship was consistent with and part of the highest idealism. Our ancestors knew that the mind was 'Daivam' (god-born). They knew that in his previous creations the Lord did not inspire any living species with his inner mental energy. They knew that the mind was

'Yad apūrvam yaksham antah prajānām' 'the new (previously unknown) burner within created beings,' and that it was the light of lights (Jyōtishām jyōtih) that for the first time animated organic matter in the glacial period. Introspection and identification of the individual Purusha, the Divine spark in man, with Purushōttama or the Supreme

personality of Vishṇu who creates the living world and flows through creation till it is absorbed in his undifferentiated self has been the *summum bonum* of human existence as declared with endless iteration from beginning to end of Brāhmanical literature. The worship of stones is therefore a help to the recognition and recollection by grateful man of the mighty works of the Lord *below*, which prepared the earth for his habitation and enjoyment. This chapter is part of my answer to my son Thyāgarājan who bears the name and inherits the intelligence and sense of duty of my late revered father and who asked me 'What is all this, father? If lava, which, after all, is stone, is everything, what about mind and morality?' In the next chapter I will deal with morals and close the book.

CHAPTER XV.

THE COMMANDMENTS.

THE Riks describe the destruction of the great glaciers by the heavenly volcanoes, chiefly Indra, the birth and forms of Agni in the heaven, mid-region and the snows, the descent of Agni into the Pṛthivī or longitudinal valleys, and the formation of great earth-born heroes round whom habitable horizons were created by destroying minor glaciers, suppressing and breaking up moraines and erratics, and battering down rocks and darkening rock-walls. When by Āpri (propitiatory) work and the resultant favour of Agni and the great gods, a great cone was firmly established amid peat-moss with subsidiary cones and naphtha reservoirs and vents (sūris and vipras), then commenced the detailed work of preparing the valley for the propagation of human, animal and vegetable life. In a region of interminable ups and downs, of endless ridges and furrows, of solid rock and rock-*débris* of all kinds, angular, rounded and slaty, in a wilderness of erratics and stones, the creation of level stretches and soil was a task beyond human powers. The Ṣukla Yajus is the Vājasanēya Samhita or the collection of hymns dealing with the growth of soil. Vājasani is literally

the gathering of soil and Indra is described as the bearer of soil which he gathered (on his own body),

'Ayam vājam bharati yaṃ sanōti.'

With the introduction of the heater (Hōta, God) into the cols at the head of the Priṭhivī the task of levelling the ground by the aid of subsidiary tuff-cones (Durona) and domes (Dama) commenced. The Rishis and Kārus flowed steadily, humbly, and horizontally *below* the gods to induce steady horizontal flows of lava. The gods are pleased and bountiful when approached with prostrations (namas) by pure Brāhmans with bright intelligence and sweet musical praise (Vipras with Riks and Stōmas) but are maleficent and destructive, spread wolves (scoria), and cut up and disfigure the earth when they are forced and worried by the Āgas and Ēnas (erratic side-thrusts and upthrusts) of impatient explosive Brāhmans. Vishṇu established the supports of the earth (Dharma) by humble horizontal flows between horizontal beds of sediment and Bhagavān as He is, He is the devotee of His devotees, the humble Bhakta of His insignificant Bhaktas. In so far as the Vājasanēya deals in detail with the production of king-cones through beds of peat-moss by the action of Sōma and waters on Agni, it is a full commentary on the Āpri hymns of the Rig Vēda. That work is a necessary preliminary to the formation of healthy humus and fertile clay (Ūrja and Isha), the twin sources of life on

earth. The object of yagna is declared in the very beginning of the Ṣukla Yajus to be the production of Isha and Urja. Water charged with Sōma or the essence of peat-moss is Ūrja, while Isha is agricultural clay fertilised (vājavat) by Gō (lime) or Aṣva (felspathic silt). Gōpati is the king-cone presiding over Sōma and the Gōtra-Rishi is the cellular reservoir in which filtered Sōma is accumulated below the cone. The iridescent bubbles of hydrocarbon gas forming and bursting on the surface of the cellular reservoir are aptly compared to bees on a honeycomb by the great Kakshīvan born of Dīrghatamas. When a yajamāna (king-cone) animated by Hōtar Agni is firmly established round Brāhmans who feed his fire with bitumen of all kinds, when with the help of the gods chiefly Indra, Mitra, Varuṇa and the Aṣvins, he has suppressed or subordinated other cones, jāmis and ajāmis (born of the same fissure or other fissures), when he has cleared the valley of rocks and glacial *débris*, the enemies of life, then commences the growth of soil, vegetation and animal life. In the Ṣukla Yajus the seasons are associated with Agni and not with the sun. The Ritus were produced by Agni's volcanic heat (Agnēr antaṣṣlēshōsi), and all the Agnis between the heaven and earth are invoked to work harmoniously and establish the various seasons in their proper order. The six seasons mentioned in the Ṣukla-Yajus are the seasons of Agni, and the Hēmanta and Ṣaiṣira (the

seasons of falling snow and chill frost) are treated as one season corresponding to winter. When the Ṣaiṣira came and the sun went down to his lowest level, when many a glimmering dawn never brightened into day, then was the need for Vaiṣvānara Sūrya in the highest heaven to light the valleys below, and for special descents of Indra, Agni and Brihaspati, to enable our ancestors to tide over the winter, to melt the frozen waters and keep up breath and motion in the world of life. The sixteenth chapter of the Vājasanēya is appropriately dedicated to the might of Rudra and his all-pervading, omniform sons immediately following as it does the arrival of the winter. All the characteristics of Rudra and his snow children falling, fallen, hardened, compacted and consolidated, moving and stationary, are detailed with a wealth of detail which can be realised only by a dweller in the Himālayan heights. It goes without saying that Sōma was the great necessity of life, and the Arctic explorer Peary had to include petroleum as well as alcohol (Sōma and Surā) in the daily rations allotted to the members of his latest expedition to the Pole. In the Yajus the distillation, natural and artificial, of Sōma, and the production of its innumerable varieties out of the raw mother cows are detailed with bewildering circumstantiality. Distilled Sōma is Dakshināgni or 'presentation' Fire, the Āhavanīya being the lava of the divine volcanoes ' to be invoked ' and invited to come

down to help the yagna, and the Gārhapatya, the small dome of viscous lava round which the householder settled. Vaiṣvānara Agni is also the naphtha distilled in the Aditya cones out of Savitar lava and is identical in substance with Twashṭar's Sōma manufactured in the primary fissures by condensation of flashing bubbles (Riks) of methane and acetylene. Sōma is necessarily the king of the Brāhmans as Vipras are petroleum purified by distillation and the latter feed, purify and regulate the king's beneficent activity as manīshīs. The king-cone is the king of the Viṣas, the surface soil and sub-soil he produces and fertilises with his ashes, mud-flows and crumbling lava-flows. The agriculturist is the Vaiṣya and not the trader who is a Vaṇik. When Agni's seasons became regular and they were able to distil and lay up stores of petroleum, agriculture, cattle-rearing and permanent settlements followed. Arithmetic was, of course, the first of sciences when a sense of permanence and proprietary right arose. The raising of numerous varieties of grains and pulses, cattle, sheep and goats follows and in the XVIII Chapter are described the sources and elements of settled life and civilisation. The maintenance of a volcano in healthy condition chiefly by the aid of the Aṣvins, the death of a great king-cone, the production of new volcanoes out of decaying ones, the wars of volcano with volcano and the rearing of an imperial volcano by Aṣvamēdha follow. The Aṣva is a subterranean

sea of liquid mobile petroleum of low specific gravity distilled under sands or waters and rising through them (udyan samudrādatha vā purīshāt.) It corresponds to the oil-charged sands of Baku and the petroleum that rises through the Caspian Sea. Great streams of equine Sōma were led under the fissure or broken crater of the dead king and the Āpri ritual was repeated on a large scale. The production of an emperor-cone by Aṣvamēdha involved the exhaustion of petroleum. The potential stores of heat, light and horse-power of future generations were converted into the fleet victorious but short-lived cavalry of an ambitious emperor who with their aid carried desolation to happy and contented kingdoms in his lines of march. Varuṇa, the far-seeing and just, resented the depletion of the Aṣva stored in his bosom and watery base. When naphtha is raised through oil-sands, it spouts like a geyser and it is a race-horse (arvat) winged with ṣyēna (marsh-gas) and running in rapids like a deer.

'Ṣyēnasya pakshau hariṇasya bˉhū
Upastutam mahi jˉtam tē arvan.'

Its raising, removal, and immolation in new volcanoes involved not only incalculable loss of power to future generations of men but resulted in enormous accumulations of devastating quicksands (Druhas). These, when filled with water by the numerous streams which coursed down the grand frame of Varuṇa, became unhealthy swamps and bogs, the

mahōdara disease (dropsy) which was Varuṇa's judgment on short-sighted men for destroying his horse-Sōma and engulfing his fertile base with barren treacherous sands (Druhas). Dropsy is the punishment for Drōha. The Pārthiva Emperor thus raised and established by horse-sacrifice is crowned by the Brāhmans and acclaimed by his subjects. He surveys his kingdom from his imperial throne and proclaims 'I will look upon all my subjects with friendly eyes. Let all my subjects look upon me with friendly eyes.' The Brāhmaṇas pray 'Let this king rule long with the help of the gods and Brāhmans. Let a great warrior be born of him. May peace and plenty reign over his kingdom.' Then come the chapters in praise of the Lord as the subterranean Purusha who raises the earth and rises through the globe encircling it with a belt of volcanic heads, eyes, and feet, as Viṣvakarman, the architect of high-crested volcanoes, as Hiraṇyagarbha and Prajāpati, the Lord of Creation, and as the sheen of the Brahman, the vivifying source of organic species. The work of the central Agni, the unknown, is then summarised in three simple sublime and sonorous verses the eighth, the eleventh and twelveth verses of the 33rd Adhyaya:—

'Vēnas tat paṣyannihitam guhā sad yatra viṣvam bhavatyēka nīḍam
Tasminnidam sancha vichaiti sarvam sa ōtah prōtaṣcha vibhūh prajāsu.'

(Vēna saw that lowest cave where all

existence is gathered into one nest. In Him this All is absorbed, out of Him this All is differentiated. He that differentiates Himself is woven and cross-woven into all born beings.) Vēna, Kāma, or Desire I have explained is the first-born of Vishṇu's essence born of the contact of waters with the metallic carbides of his deepest seated magma.

'Parītya Bhūtāni parītya lōkān parītya sarvāh pradiṣo diṣaṣcha upasthāya prathamajām ritasya ātmanātmānam abhisamvivēṣa.'

[Passing round the underground worlds of the past, round the visible horizons in all directions, taking his station below the first-born of Rita, with His (living) body He penetrated (and vivified) His (dead) body.] The first-born of Rita is the continental plateau which first rose out of the waters. This the Lord threw into tempest-tossed seas of heavens and earths.

'Pari Dyāvā Priṭhivī Sadya itvā pari Lōkān pari diṣah pari svah.

Ritasya tantum vitatam vichritya tadapaṣyattadabhavat tadāsit.'

(Wheeling rapidly round the heavens and earths, round the horizons, directions and surface of the land, and opening out the tangled threads of Life, It saw, It became and It was.) This represents the parallel flows along the strike of the primary ranges and valleys and the cross-flows over the face of the land. The tangled threads or lines of life are the great primary fissures or Jānis. This being

so, as the Lord created and widened out the lines of life and vivified His dead and crumbled bones with His living body, as He interpenetrated the world of life with His energy and inspired the human frame with sparks of His Divine mind, the very first verses of the first of Upanishads, the only Samhitō-panishad lays down, for observance in all the ages to come by man created in His image and endowed with His mind, the following two commandments:—

'Iṣāvāsyam idam sarvam yat kincha jagatyām jagat.

Tēna tyaktēna bhunjīthāh mā gridhah kasya svid dhanam.

Kurvannēvēha karmāṇi jijīvishēt ṣatam samāh.

Evam tvayi nanyathētōsti na karmma lipyatē narē.'

'All that lives in this living world is the Home of the Lord. Therefore enjoy' (what is your own) 'giving up' (what does not belong to you). 'Covet not anybody's wealth.' That is the rule of conduct as between man and man. Enjoy the fruits of your works and covet not the fruits of your brother's labour as the Lord is the common Father of both.

The second commandment is an absolute injunction against laziness and indifference to Life. It is as follows:—

'Here in this world *doing works* you must wish to live a hundred years. This is the way and there is none besides. Acting thus, your actions will not soil your soul.'

In other words, the Lord organised your frame and inspired you with a spark of His divine energy. Work out the potentialities of your body according to His plan innocently and recognising His Fatherhood. Your spirit will then emerge pure out of your body at death and rejoin Him. This is why the Rishi in the Riks prays 'A hundred autumns is the limit when, O Gods, you have ordained the decay of our bodies, and sons take the places of their fathers. Do not injure us in the midst of our life's progress towards decay.'

The prayer to preserve unselfish purity of mind is contained in the 34th chapter of the Vājasanēya in a set of verses whose beauty, harmony and sublimity can be transferred to English only by a poet like Milton. The first verse is:—

'Yajjāgratō dūram udaiti Daivam tadu suptasya tathaivaiti.

Dūrangamam jyōtishām jyōtir ēkam tanmē manas ṣubha sankalpamastu.'

'That God-born mind of mine which, when I am awake, soars so high, which even when I sleep travels so far, that far-wandering Light of Lights, let it ever imagine good.' It is in the succeeding verse that the human mind is said to be a yaksha (melter, burner) unknown in previous (pre-glacial) creations of life. The great prayer of prayers is thus the prayer for the purity and unselfishness of man's individual consciousness born of the Lord's highest energy by His special favour, a fervent

prayer that our minds should always wish good and happiness to the living sons of the Lord who gave us life and lives in all the world of life. The Vājasanēya ends with the assurance of the Rishi born of the conviction of practical realisation 'Yonder Purusha in Āditya, He is I.' The Jews and the Brahmans alike believed that the Lord to whom dreadnoughts, aëroplanes and engines of human war fashioned on His weapons are as nothing, who reveals only an infinitesimal portion of His power in the great volcanoes, who can dry up the sea or make it fly like a whipped cur, who can shake, shear and unsettle this crust from pole to pole, they believed that this Almighty Lord took count of the good and evil that His children over the earth did and that He meted out destruction or beneficence on the day of His judgment when He chose in His own time to pronounce it. All the wealth and life on this globe is His and He expects us, His children, specially favoured with a spark of His Divinity, to observe His injunctions to work, to eat and enjoy without coveting the goods of our brethren, and to return to Him as pure as when He inspired us with mind and life. Through the earth, which is His body and out of which our bodies were fashioned, He works His miracles, rewards and punishments. The sins of the fathers are visited on their childern because—

'Prajām anu prajāsyasē tattē martyāmritam.'

'You are successively born in your children. That, O mortal, is your immortality.' This immortality is, of course, not the immortality of the Divine Purusha. I will end this chapter with the great prayer of the Yajus which is appropriatly prefixed and affixed to the sweetest of the later Upanishads, the soul-soothing Kaṭhavallis which wind like lovely bright-flowered creepers round the Iṣāvāsya tree and in which the transmigration of the ego is first taught by the great and dread guardian of the gates of death.

'Saha nāvavatu Saha nau bhunaktu
Saha vīryam karavāvahai
Tējasvināvadhītam astu
Mā Vidvishāvahai.
Om Ṣāntiṣṣāntiṣṣāntih.'

'Let Him protect us both. Let Him feed us both. We will both energise harmoniously. May our studies brighten our intelligence. We shall never hate each other. Om Peace, Peace, Peace.'

It is my fervent prayer to the Lord below that this prayer of prayers based on His commandments may be the prayer of the human race, whenever and wherever man meets man and that when He rises as Kalki in the near future He may look on His human children with kindly and merciful eyes and deal out beneficence and not destruction.

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